Drug & Cosmetic INDUSTRY

JANUARY, 1950

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ELMER SHEETS, Managing Editor
FRANCIS CHILSON, Production Consultant
MILTON A. LESSER, Technical Editor
HARRY G. KELBLY, Raw Material Editor
FRANK CHILD III, News Editor
HILDA C. McCOLLOM, Art Director

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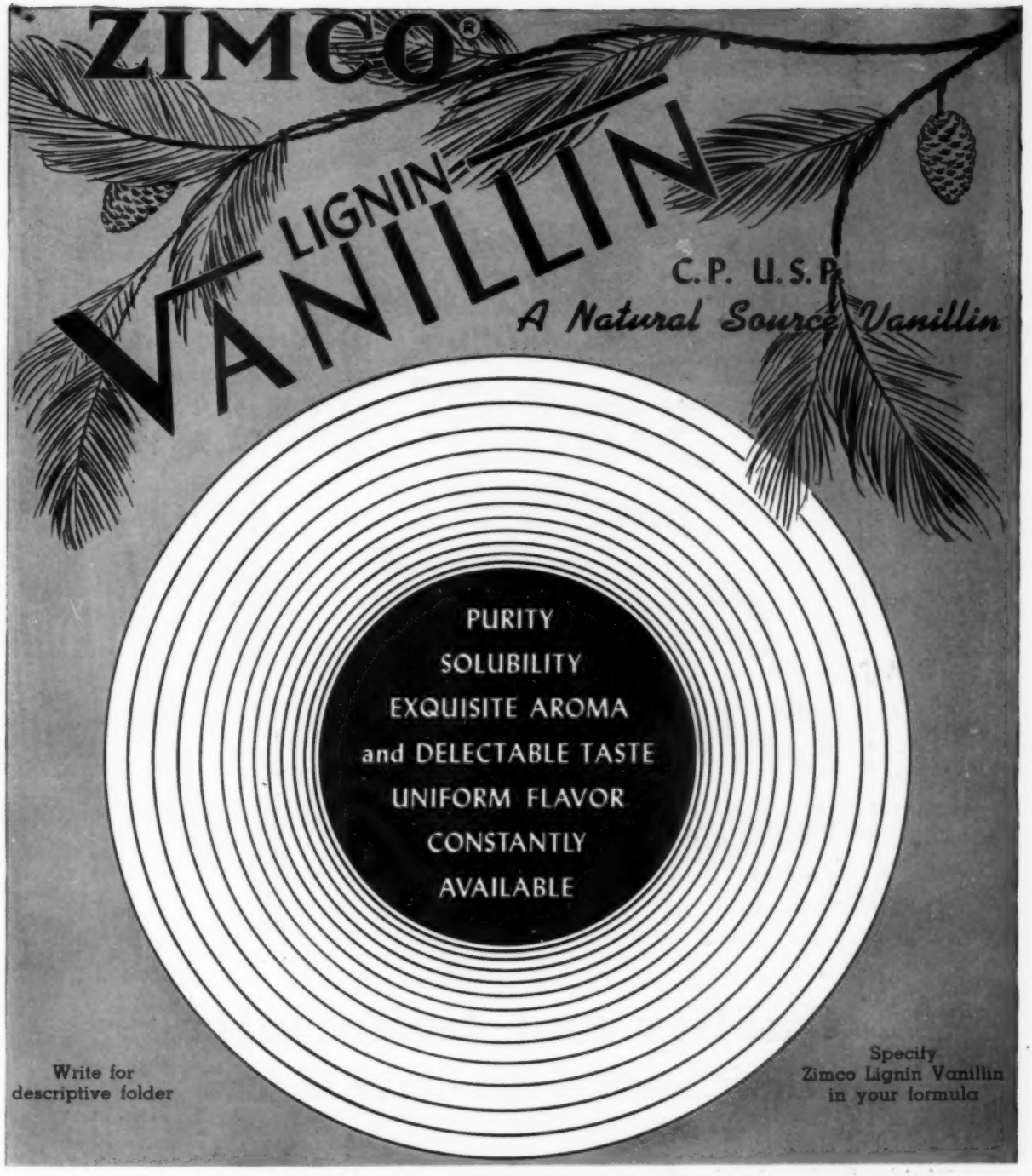

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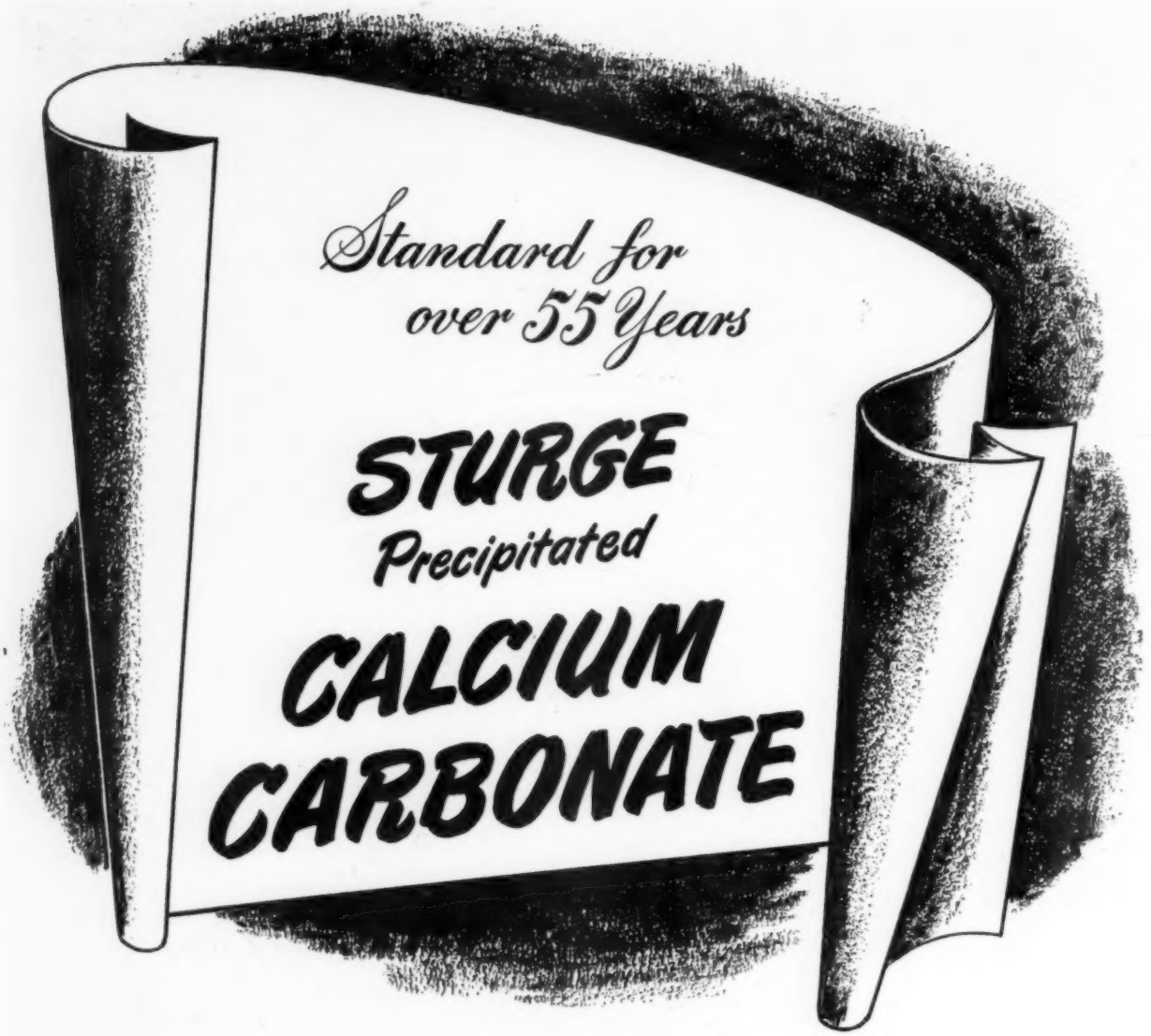

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I want to do more than just send you an order which would only mean that your goods are at rest in that store. I like to sell and my idea of selling is to keep your goods moving through the store to Miss and Mrs. Public.

I would expect you to give me a clear, concise story of your product—its quality, competitive advantages and selling points. I would need to know your advertising program, so that I can build up in the mind of these retail folks the expectation of substantial consumer interest. I want also to know about your company policies so that I can win friendly admiration for your products and your company.

I can sell perfumes and cosmetics because I know the people who in turn sell them to the public.

Let me carry the kind of message which encourages retail display for your product and friendly, informed selling behind the counter and you will soon see results in increased retail orders.

I have been selling perfumes and cosmetics for over 33 years. Any good retailer will give you a reference.

My name is BEAUTY FASHION:

Do you need a top-notch, tested, retail salesman?

"He said there are miracle drugs, lady, but no miracle cosmetics."

KEEPING POSTED

FTC to Rehear Cases

AS WE recently pointed out, the change in the make-up of the membership of the Federal Trade Commission is apt to change radically the type of decisions which the Commission arrives at in deciding the questions placed before it. Of the five commissioners constituting the Commission a year ago, only two remain. These are Lowell B. Mason and William A. Ayres. Mr. Mason, who has been an independent thinker not generally in agreement with the other commissioners, was reappointed this year to a full term, after having been appointed a few years ago by President Truman to fill an unexpired term. During the current year President Truman has made two more appointments to fill vacancies: these are former Senator James Mead and John Carson, former executive secretary of the Cooperative League of America. President Truman still has another vacancy to fill. This means that a majority of the commission will be entirely new.

In the face of this situation, a motion of Acting Chairman Mason was approved to give attorneys in some thirty cases which have been pending before the Commission for over a year, an opportunity to reargue their cases before the reconstituted Commission. Commissioner Mason questioned the advisability of the Commission proceeding to decide cases of which a majority of the members would have no knowledge except that read in the record. It was the feeling of Mr. Mason that not only were the respondents entitled to a decision by members who had heard the cases, but that the new commissioners themselves should have the opportunity to hear the questions involved discussed so that they would not have to wade through thousands of pages of record to determine the question.

Cases within this industry to be reargued and the dates of reargument are: Dila-Therm Company, South Bend, Ind., misrepresentation of the therapeutic properties of a device called Dila-Therm, February 27; Consolidated Royal Chemical Corporation, Chicago, misrepresentation of the therapeutic properties of a medicinal preparation called "New Pe-Ru-Na," March 17; Proctor & Gamble Company, Cincinnati, misrepresentation of the liquid dentifrice "Teel," January 23; Carter Products, Inc., New York, false advertising of Carter's Little Liver Pills, January 30; Richard Hudnut, New York, violation of the Robinson-Patman Act in connection with furnishing of cosmetic demonstrators to retailers, April 3; Elmo, Inc., Philadelphia, same charge as Hudnut, April 5; Charles of the Ritz, same charge, April 10; Primrose House, Inc., New York, same charge, April 12; Coty, Inc., New York, same charge, April 14; Bourjois, Inc., New York, same charge, April 17.

It would be a great thing if the newly constituted Commission could arrive at a decision in the cosmetic demonstrator cases. The Robinson-Patman Act was enacted in June, 1936, and these charges were brought about a year later. They have been pending now for some twelve years with the Commission unable to make up its mind.

Old Lotion Gets Sales Stimulus

NEPTO Lotion, the hand preparation which the E. L. Patch Company of Stoneham, Mass. has been making from sea moss, glycerine, and alcohol for thirty years, received a real sales stimulus in the Chicago area recently as the result of a piece appearing in the Chicago Daily News. The column, entitled "Old Lotion Makes Red Hands Smooth," drew 6,000 telephone calls and 3,000 mail inquiries in three weeks, and additional merchandise had to be shipped into the Chicago area to supply the demand. The piece, which appeared on the Woman's page of the newspaper, was based on the conversation of two feminine office workers discussing the subject of chapped hands. One of the girls suggested Nepto as a remedy for "rough and red-dy paws," stating that she had used it for fifteen years on the recommendation of a hospital supervisor. The response to the article was so unusual that Editor and Publisher featured it on the front cover of an issue.

Fishbein Takes on Another Job

IN ADDITION to his new position of medical consultant for the book publishing firm of Doubleday & Company and its subsidiary the Blakiston Company, Dr. Morris Fishbein has taken on another assignment as contributing editor of Postgraduate Medicine. Dr. Charles W. Mayo, editor-in-chief of Postgraduate Medicine, announces that "Dr. Pepys' Diary"—the feature which Fishbein was forced to discontinue in the Journal of the American Medical Association—becomes a regular feature starting with the January issue. Pointing out that Dr. Fishbein has just returned from abroad, the editor states that under the heading

"Medicine Abroad," Dr. Fishbein "will write each month the fascinating story of his experiences, acquaintances and conclusions on the development of international medicine."

Toni Ups Research

A RESEARCH appropriation of $500,000 for 1950 has been announced by the Toni Company, the Company claiming that it represents "the largest expenditure in the history of the cosmetics industry." The money will be used for further studies on human hair and human skin, according to Toni's vice-president in charge of research Raymond E. Reed. "As a result of our continuing research program, which next year will include full-time work by more than 100 trained scientists, we are making rapid strides in the solution of many fundamental problems dealing with the chemical and physical properties of hair and skin," he said. The research is to be conducted principally in the Company's laboratories in Chicago and St. Paul, but other work has been assigned to independent laboratories and to various universities, including the University of Illinois Medical School in Chicago. Augmenting the theoretical studies, Toni will continue to maintain its research clinic in Chicago, where an average of 115 "models" each week undergo "use" tests with various cosmetic formulations. The "models" report back to the clinic regularly in subsequent weeks for further tests. Toni also analyzes individual hair fibres submitted by consumers, sending them reports on the condition of their hair to act as guides in permanent waving and general hair care. During 1949, Toni expended $300,000 on research.

Imra Order Set Aside by FTC

THE Cease and Desist Order issued against Imra depilatory May 26, 1948, has been vacated and set aside by the Commission. After reconsidering the order the Commission found there is substantial expert testimony to the effect that the product is reasonably and comparatively safe when used as directed and that its use will have no adverse effect upon a normal skin. This order was the subject of an article appearing in our issue of September, 1948, entitled, "FTC Attacks 'Safe' in Cosmetics." In this article we pointed out that the Commission's expert witness, Dr. George C. Andrews, the well-known New York dermatologist, failed to testify that the product was unsafe.

In reconsidering the order the Commission observed that it was based in part on findings that certain injuries resulted from the use of the depilatory even though directions for use were followed and the skin of the user was normal. The Commission noted that such findings were based almost wholly upon the testimony of witnesses who used the depilatory and who were not qualified, either by training or experience, properly to determine the cause of their injuries. The Commission pointed out that the company supplies users with specific directions as to how it should be applied and warns them to use it only on a small tested area whenever the skin appears to be sensitive and to refrain from its use if the skin is inflamed or sore. In vacating the order, the Commission relied on the substantial testimony to the effect that the depilatory is reasonably and comparatively safe when used in accordance with directions, and that its use, in accordance with directions, will have no adverse effect upon a normal skin.

The Adrenal Gland and Health

AFTER pointing out that "this history and development of ACTH in stimulating the adrenal gland is indeed unique in medical annals," Dr. John R. Mote, of the Armour Laboratories, summarizes the role of the adrenal gland in health and disease as follows:

"The picture that is developing is that the adrenal gland plays perhaps the major role as to whether or not a person is sick or well, regardless of the illness or the cause thereof. In other words, the person with an adrenal gland that can adequately react to various types of stresses, be these infection, trauma, emotion, or internal environmental stresses, remains well, whereas, the person with a 'mal-functioning' or 'mal-stimulated' adrenal gland eventually comes down with anyone or more of an almost unlimited variety of diseases.

"It is the results to date, and a forecast into the future, that leads me to say that the discovery of the role of the adrenal gland in health and disease has probably opened up the largest area of medicine that has been opened up since the discovery of bacteria. In consequence of this fact, it will probably take decades to work out the details of the true cause and prevention of the numerous diseases which afflict the population of the world today, and when these ends are accomplished, it is my conviction that a new type of medical teaching and a new type of medical practice will have evolved."

Schering Sale Again Planned

LATEST information from the office of the Alien Property Custodian is to the effect that the Schering Corporation will be put up for sale some time next Spring. Early last Summer a somewhat definite promise of the sale of Schering during the fall of 1949 was given, but now all has changed and now the promise is for six months later. Harold I. Baynton, acting director of Alien Property, said recently that he has "high hopes" that the Government will be able to name a day for submitting bids in February, with the date deadline probably set for late March. The offer has been delayed by "legal complications" incident to preparing a prospectus and other matters, and the department's attorneys are still struggling with them, it is said. Whether this is the reason or not, it appears that the Government stands to gain by the delay for the reason that Schering sales for 1949 must be substantially ahead of 1950 solely on the basis of its entirely new business in the antihistaminic cold preparations marked by Schering and its subsidiary, the Union Pharmaceutical Company.

Drug and Cosmetic Law Session

THE Section on Food, Drug and Cosmetic Law of the New York State Bar Association, which will meet January 26 in the meeting hall of the Association of the Bar of New York City, will hear papers of real interest to this industry. Associate Commissioner of Foods and Drugs, Charles W. Crawford will speak on Legislative and Administrative Progress; Vincent A. Klienfeld, head of the General Regulations Unit, Criminal Division, U. S. Department of Justice, will speak on the Applicability of Federal Food, Drug, and Cosmetic Act to Drug Advertising; Hugo Mock, Counsel for the Toilet Goods Association, will give Some Observations on Law of Cosmetic Advertising; George H. Sibley, vice-president and general counsel of E. R. Squibb &

Sons, will speak on Use of Colors to Identify Medicinal Products; Michael F. Markel of Washington, D. C., chairman of Committee on Uniform State Food, Drug and Cosmetic laws, will speak on Imitation Provisions of Federal Food, Drug and Cosmetic Act.

U. S. International Trade Fair

DRUG industry leaders are participating in the First United States International Trade Fair, a giant trade show, patterned after the world famous Leipzig and Antwerp fairs, to be held in Chicago, August 7 to 19, 1950. Participating as members of the advisory or executive committee staffs are A. T. Brainerd of the Ciba Co., H. D. Arneson, president of Abbott Laboratories, International, and W. H. Stanley, vice-president of William Wrigley, Jr., Co. One million square feet in Chicago's largest exhibition halls will house the Fair, which, it is said, will be the most tremendous trade exhibition ever held in the Western Hemisphere.

Bristol-Myers to Fight Ipana Order

BRISTOL-MYERS Company has announced its decision to appeal in the Federal Courts from a Cease and Desist Order issued by the Federal Trade Commission against advertising claims made for Ipana Tooth Paste. Under the Order, Bristol-Myers is required to discontinue claims that twice as many United States dentists personally use Ipana as any other dentifrice; that more United States dentists recommend Ipana for use by patients as any other two dentifrices combined; that Ipana plus massage will prevent "pink tooth brush," or has any significant value in treating mouth, tooth, or gum diseases. The phrase "Ipana for the smile of beauty" is allowed to be continued in use, although the Commission objects to that also.

In announcing the Company's decision to appeal the decision of the FTC to the courts, Bristol-Myers President Lee H. Bristol said:

"Although there are two subsidiary questions, there is only one basic issue in the case—whether or not massage of the gums is beneficial to dental health and whether Ipana Tooth Paste contributes something of value in the massage. The overwhelming concensus of dental opinion in the United States is that gum massage *is* desirable to dental health although some authorities differ from others as to the detailed mechanics of gum massage. It was clearly demonstrated from actual clinical proofs that Ipana Tooth Paste constitutes a valuable adjunct to the massage. The Commission introduced the views of an infinitesimal minority of the dental profession who argued that massage was not beneficial or that Ipana Tooth Paste, with the action of its essential oils, was of no material benefit to the massage. Against this infinitesimal minority of dental opinion was the overwhelming concensus of qualified dental opinion that massage of the gums was beneficial and there was actual clinical proof introduced to show that Ipana was valuable in stimulating circulation in the gums during the period of massage." Stating that "we welcome this opportunity—the first we have had since the complaint was issued in 1942—to place the evidence before a court of law," Mr. Bristol said:

"For many years Bristol-Myers has devoted hundreds of thousands of dollars to scientific research on dental health and oral hygiene. That program has been conducted in some of the leading dental colleges in the United States as well as in our own laboratories. We believe we are eminently qualified to stand back of any and all opinions which have been cited in the advertising of Ipana."

New A. D. M. A. Committee

THE American Drug Manufacturers Association has established a research administration committee under the chairmanship of W. Furness Thompson, vice-president of Smith, Kline & French Laboratories. This committee is a subgroup of the research and development section, and will hold its first meeting coincident with the next meeting of the research and development section, February 6 and 7, at the Cleveland Hotel, Cleveland. The biological section is to meet at the Shoreham Hotel, Washington, April 13 and 14. The research administration committee is composed of the top administrative officials of ADMA member firms and will concern itself with questions of policy related to research rather than to the technical problems of research.

Barbiturate Control

STATE pharmaceutical associations were urged in a resolution adopted by the National Drug Trade Conference last month, to further enactment of legislation for control of sales of barbiturates on the basis of the model which the committee of the Conference has prepared. It was pointed out that four states—Arizona, Kentucky, New Mexico, and Wyoming, have established no controls over barbiturates. It was also indicated that there is pressure in certain quarters for the inclusion of this control in the Narcotic Division of the Treasury Department, but that the Narcotic Division and Food and Drug Administration officials believe that control could more properly and more efficiently be conducted on a State basis. The U. S. Public Health Service report of a study made by Dr. Isbell was criticized to some extent. This report expresses the opinion that in causing addiction, alcohol ranks first, barbiturates second, and opium derivatives third. It is said that Dr. Isbell used massive doses of barbiturates rather than therapeutic doses in arriving at his conclusions.

Prescription Refills

THE matter of prescription refills was briefly discussed at the recent National Drug Trade Conference based upon the desire of the Food and Drug Administration to invalidate the practice of permitting continuous refilling of doctors' prescriptions. It was stated that this might get to the point of an amendment to the Federal Food, Drug and Cosmetic Act resulting in some sort of a compromise arrangement. Under this compromise oral prescriptions would be permitted with certain exceptions such as narcotics, barbiturates, etc. Under such amendment, the doctor would be able to phone a prescription to his druggist, and the dispensing of Rx products would be valid upon the druggist noting this prescription in his records.

The Pharmacist and Rx Products

THE responsibility of the pharmacist in checking prescriptions to see that the dosages prescribed by the doctors are safe was discussed by the recent National Drug Trade Conference. In view of the fact that the Food and Drug Administration recently ruled that informative literature on Rx products may be supplied to pharmacists, it was felt that some method be devised so that the pharmacist would have this information immediately at hand when he was called upon to fill a prescription containing one of the many pharmaceutical

specialties with which he might not be familiar. The wealth of material which he would have to have on hand to give him complete information on the steadily increasing number of prescription specialties calls for some method of simplification so that he would be certain to perform his professional duties in all instances, it was felt. One possible solution would be the legalization of a tear-off label containing such information. In this way the proper information would be right in the pharmacist's hand when he needed it. The conference called for a committee to explore a modification of present prohibitions against such labeling.

Antihistaminics and Colds

THE dynamic introduction of antihistaminic drugs for over-the-counter sale as cold abortionists just as the cold season was breaking, has just about set this industry and the public on their respective ears. Tied to the introduction of Anahist was an article by Paul de Kruif in the Readers Digest—the magazine which many drug manufacturers believe now sets the style in therapeutics, although some of the ethical boys blush prettily when de Kruif waxes enthusiastically about their new preparations. Although Anahist was the first reported as approved for over-the-counter sale by the Food and Drug Administration, Inhiston of the Schering subsidiary, Union Pharmaceutical Company, broke the first large newspaper advertisement. Since that time, Kripton of the Whitehall Pharmacal Company (American Home Products Corporation), Resistab of Bristol-Myers Company, and Anamine of Grove Laboratories have been widely advertised

There are now three antihistaminics approved for over-the-counter sale. One of these is the Schering product marketed for over-the-counter by the Schering subsidiary, Union Pharmaceutical Company as Inhiston. A second one neoantigen, produced by Merck & Co. under a French license, and sold Anamine by Grove Laboratories, and as Kripton by the Whitehall division of American Home. The third is thonzylamine hydrochloride produced by Nepera Chemical Company. This is marketed for over-the-counter sale by Nepera as Anahist, and by Bristol-Myers Company as Resistab. This product has been marketed ethically for some time for hay fever and other allergic conditions by Wyeth, Inc. (American Home Products Corporation) under the name Neohetramine hydrochloride, and appears in New and Non-official Remedies of the American Medical Association as an accepted product, although this acceptance has nothing to do with its use in the abortion of colds.

Supplies of these products, as well as supplies of many of the antihistaminics still being marketed solely for use on prescriptions, are short. Manufacturers have been faced with such heavy demand, that in a great many instances they are at a loss to obtain sufficient raw materials, and/or sufficient men and equipment to supply their customers. Allocation of supplies is the rule today in many of these basic products. Numerous additional manufacturers would like to get into the sale of these preparations, but the shortage of supplies makes this impossible at the moment.

An example of the raw material situation is thionyl chloride, a raw material used for the synthesis of some of the antihistaminics. This chemical is only made by the Hooker Electrochemical Company, and it is a product which did not heretofore command a very large market. In fact another chemical company thought of making this product some time ago and got to the pilot plant stage, finally deciding to abandon it because of the smallness of the market. With the advent of its use in the antihistaminics, Hooker expanded production by a considerable amount. However, they are loath to expand production further because they have no idea what the size of the antihistaminic market will be when the distribution channels and consumers are supplied, and when the market adjusts itself to a normal basis. Also they realize that cold preparations are seasonal in demand, and they have no desire to gear production to satisfy a seasonal load all at once, meaning that demand for this use would drop close to zero for a considerable part of the year. Therefore, this raw material is apt to constitute a bottle-neck for some time.

Another raw material for thonzylamine hydrochloride is in extremely short supply, and a raw material to make this second raw material is being sought. This material is a by-product of the production of coumarin by some makers but not by all. Large amounts of it have not been recovered, and it is necessary to install recovery equipment and this takes time and money, and some assurance of a continued market.

It is quite generally felt that the products are here to stay, although the eventual size of the market and the products which will eventually dominate it remain to be determined. While the antihistaminics are not exactly new, and while the discovery of their use as cold abortionists was reported by Brewster some time back, it is the fact that these products can now be sold over-the-counter and therefore advertised to the public for the abortion of colds that has sent their sales to dizzy heights. The public will buy in a big way, any product which will prevent or rid them quickly of colds. One has only to recall the large segment of the population of this country which swallowed tablets containing vitamin A Winter after Winter in an unsuccessful effort to stave off colds to know that the public will seek out preventives even if they are not advertised but promoted only by word of mouth. Therefore the terrific demand for these products, clinically proven effective for the abortion of colds in many studies, and advertised heavily and dynamically to the public through all known media, should not cause great surprise.

It must be considered that these products represent the first time since the enactment of the Federal Food, Drug, and Cosmetic Act almost twelve years ago, that a new and effective drug product has not come to the consuming public through the doctors as an ethical product, but has been offered directly. One can hardly blame the firms engaged in marketing advertised proprietaries for going hogwild and pulling all the stops in their merchandising efforts and in trying to obtain a predominent position in the market for this new type of product for which there should be a continuing heavy demand over the years.

Warnings have been properly sounded to the public and to the manufacturers of these products regarding their use by the public, and promotion by manufacturers. The public is apt to get the idea if these products will abort a cold if taken only in the early stages of the cold, then the thing to do is to take them every day during the Winter as a preventive. One manufacturing has suggested this use by showing a picture of two photographic studio models in bathing suits, stating that these models use the product because they realize that going from the warm studio to the cold outdoors they are apt to catch cold. This is far from the proper approach because the effects of these products on the various organs of the body if taken steadily over a long period of time has not been determined. To show how otherwise intelligent people will act when a new product is introduced, we ran into a sales manager in

the cosmetic branch of the industry a few weeks ago who was suffering with a cold. We asked him if he had taken an antihistaminic. He said that he had. We asked him what one, and he replied that he had taken one brand for the entire previous week, but that he was taking another brand that week. In other words, he was taking these products during the entire duration of the cold when they could not possibly be effective. This was certainly not due to the advertising of manufacturers except that some of the advertisements do carry statements that if taken after the cold has taken hold, the product will shorten the duration of the cold.

It is a foregone conclusion that the Food and Drug Administration and the Federal Trade Commission will watch these products most closely, and that action will be taken by both these agencies to bring labeling and advertising claims, as well as warning statements into line with their conclusions drawn from the experiences of consumers and members of the medical profession in the application of these products. Recently the Food and Drug Administration said:

"The available scientific evidence at this time is that probably the antihistamine drugs have a legitimate place in cold therapy. We are, however, very skeptical of the breadth of the claims which purveyors of the product wish to make in selling medications in this class to the late public. Our skepticism arises first because a statistically sound clinical study of the effect of any medicine in the common cold is most difficult. This is further complicated when the medication must be taken at the first sign of a cold to manifest maximum results. It is common experience of all of us to believe that we can recognize the first symptoms of a cold. Many times we are wrong since after having undertaken no treatment whatsoever we just do not develop a cold. Another factor that introduces uncertainty into the situation is that in spite of much research, a precise definition of the common cold have never been forthcoming. Most authorities agree that the illness which the public refers to as the common cold is not a single disease. It probably involves a number of different diseases which manifest the same or similar symptoms. We do not believe that anyone at this time can say authoritatively whether or not the antihistamines will affect all of these disease entities."

Huisking Celebrates Forty Years

IT PROBABLY "seems like yesterday" to many of the older men in this industry, but on January 1 of this year Chas. L. Huisking & Co. celebrated the fortieth anniversary of the founding of the firm in 1910. In speaking for the firm on its anniversary, Company President Charles L. Huisking said:

"This organization, with wide-world connections, has come through this long period in which there have been changes of almost indescribable magnitude,—two World Wars, developments in industry on several occasions, which completely altered the flow of commerce, and that because of the peculiar nature of our business, also caused us at times to materially change the course of our own events. Reminiscing into the past, we are impelled to say that it looks today like a job only just begun. The uncertainties that we face make the future unpredictable, but we do have confidence that this post-war adjustment, and that the dangers that we seem to face will eventually adjust themselves, and that there is a good prospect that the world will then settle down into an era of peace, prosperity, and we hope, a disposition to have peoples work with one another towards the world's betterment."

Pharmacy Man Power

THE Commission on Professional Man Power for Pharmacy, created last month in compliance with one of the principal recommendations of the Pharmaceutical Survey, represents a concerted effort to estimate pharmacy's professional man power, and to make available for use by the National Security Resources Board and other government agencies an accurate roster of the pharmacists in the United States. Participating in the organization of the Commission were representatives of each of the ten organizations comprising the National Drug Trade Conference, with representatives of a number of government agencies acting in an advisory capacity.

The importance of pharmacy man power to the Government was expressed by Admiral Thomas C. Anderson of the National Security Resources Board, who said that of the twenty categories of professional and technical personnel engaged in the health professions being studied for mobilization in event of war, pharmacy is considered among tht top six in importance. The six groups are: physicians, pharmacists, dentists, nurses, sanitary engineers, and veterinarians. Admiral Anderson said: "To draw up a sound plan for the effective utilization of these professional groups in time of war, statistical data must be assembled which will indicate the man power supply in each profession. We need to know how many there are, their geographic and age distribution, their professional preparation and experience and other basic facts about their qualifications for active service in their home communities or elsewhere in the civilian or military practice of their profession." Stressing the need for a roster of pharmacists, Admiral Anderson pointed out that "current inventories of physicians, dentists, nurses and veterinarians have been established and are being maintained by the respective national associations."

Members of the Commission and the organizations they represent are: Temporary Chairman Dr. Robert P. Fischelis, American Pharmaceutical Association; Temporary Secretary, P. H. Costello, National Association of the Boards of Pharmacy; Dr. Hugo H. Schaeffer, American Association of Colleges of Pharmacy; George Frates, National Association of Retail Druggists, S. C. Mills, American Pharmaceutical Manufacturers' Association; Karl Bambach, American Drug Manufacturers' Association; George V. Doerr, National Wholesale Druggists Association; Ray Schlotterer, Federal Wholesale Druggists Association; T. N. Beaver, National Association of Chain Drug Stores; Basil L. Emery, Proprietary Association.

Ammoniated Popular Chewing Gum

WE NOTE from the car card advertising in the subways that Topps Chewing Gum is now ammoniated, making it possible for chewing gum lovers to keep their l.a. counts down with no effort at all. If all popular chewing gums were ammoniated, a survey of the conditions of the mouths of chewing gum lovers at stated intervals of time might prove or disprove the claim that their is a relationship between the condition of the teeth and a low l.a. count. However, if the claim were substantiated, it might drive people to substitute the chewing of gum for the dentifrices which they now use.

PHARMACOLOGICAL TESTING

ALTHOUGH the epidermis of the skin with its many "pores" or "holes" (hair follicles, sebaceous and sudoriferous gland ducts) presents a sieve-like structure, it is nevertheless the organism's armor for protection of deeper tissues against trauma and desiccation. This peculiarly perforated architecture of the epidermis permits the engulfing of considerable topically applied material which in a physiological sense has neither penetrated nor has been absorbed. It is a characteristic property of the skin of warm-blooded animals that the horny layer of the epidermis desquamates constantly and uninterruptedly.[1] In addition, the epidermis is further characterized by processes of cornification, of desiccation, and lessened viability in its outermost cell layers. All these factors accentuate a primary function of mammalian skin—namely, to serve as a barrier to the inward transfer of surface materials.

In the course of our regulatory work for the Food and Drug Administration, and from our participation in work for the armed forces in the recent war, we have had the opportunity to study the pharmacology and toxicology of many chemical compounds and complex formulations intended for topical skin or mucous membrane use. A review of the data amply demonstrates that the skin as an integument presents a relatively good barrier to the penetration of many substances. Nevertheless, it is permeable in some degree to many substances.

Modern chemistry and technology are responsible for a rapidly expanding armamentarium of synthetic products whose physical and chemical properties may make them desirable for inclusion in cosmetic formulations. Cutaneous exposure to these products and the appraisal of the potential health hazards attendant to such exposures have posed many problems in skin pharmacology and toxicology.

During the course of conferences between members of technical staffs of cosmetic concerns and members of the Division of Pharmacology of the Food and Drug Administration, the question is often asked of us "What tests shall we undertake to establish adequate data to evaluate the safety of our product?" Cosmetics occupy a unique position with regard to usage. Unlike foods, cosmetics are intended for topical application. As in the case of foods, however, and unlike common drug usage, cosmetics may be employed over the greater portion of the individual's lifetime, that is, by the young, the old, and even the diseased or infirm person.

The planning and designing of pharmacological and toxicological experiments for the appraisal of safety for use of a cosmetic product depend on a number of factors. Some of these factors may be briefly considered from standpoint of the invididual subject and others on the basis of pharmacology or toxicology.

I. Extent of Use
   - A. Total body area involved
     1. Whole Skin
     2. Appendages
   - B. Frequency of application
     1. Infrequently (hair waving)
     2. Daily (face make-up, etc.)
     3. Several times daily (sun-tan lotions, etc.)
   - C. Constancy of application
     1. Daily throughout year
     2. Seasonal (sun-screen preparations, etc.)

II. Physiological (or Pathological) Condition of the Skin
   - A. Normal Skin
     1. Age and sex differences
     2. Race differences
   - B. Irritated (abnormal) skin
     1. By weather (sun and wind)
     2. Diseased conditions

*Division of Pharmacology, Food & Drug Administration, Federal Security Agency, Washington, D. C.
Delivered before Scientific Section of Toilet Goods Association, December 7, 1949.

OF COSMETICS

By JOHN H. DRAIZE and ELSIE ALVAREZ*

Pharmacological and Toxicological Considerations

I. Determination of Skin Toxicity of Individual Components
   - A. Acute (single exposure) toxicity
   - B. Subacute (multiple exposure) toxicity
     1. Short—21-day
     2. Long—90-day

II. Determination of Skin Toxicity of Completed Formulation
   - A. Acute toxicity (as above)
   - B. Subacute toxicity (as above)

III. Biochemical Studies. Importance of Specific Analytical Methods
   - A. Excretion studies
   - B. Tissue storage studies
   - C. Organ function tests

IV. Hematological Examinations
   - A. Hemoglobin determinations
   - B. Differential cell counts
   - C. Abnormality of formed elements

V. Pathology
   - A. Gross examination of tissues
   - B. Detailed microscopic examination of tissues

VI. Primary Irritant Effects
   - A. Compounds causing breakdown of skin as a barrier to absorption
     1. Usually noted after a number of repeated applications
     2. Regenerated skin usually more resistant
   - B. Compounds producing a coagulative or mummifying effect.

VII. Sensitization Studies
   - A. Shortcomings of present tendency to use of the 5-day patch technic
     1. Possible quick absorption of quantities administered by patch
     2. A number of fresh exposures or "insults" preferable to one continuous exposure
     3. Time not adequate for development of sensitization except in case of notorious sensitizers

VIII. Acute Oral Toxicity Data or Preparation
   - A. For toxicity information in case of accidental swallowing (such as in children)

Details of individual technics for conducting studies as outlined above have been given elsewhere.[2,3] Properly conducted studies should furnish data to indicate what margin of safety will obtain under the severest conditions of use. It is believed that the acquiring of such data will be in the cosmetic manufacturer's best interest.

Although the ideal test subject is man, for obvious reasons this subject is neither advisable nor feasible.[4] The experimental animal lives under carefully controlled environmental conditions, is given an adequate diet, and maintained in a healthful state. On the other hand, man, for whom the data are sought, exists, as far as his health, nutrition, and welfare are concerned, in a heterogeneity of conditions. These factors accentuate the necessity of working for an adequate margin of safety in extrapolating animal data in their application to man.

Conclusion

The appraisal of safety of a preparation for cosmetic use requires careful planning of the proper pharmacological and toxicological experiments. In some instances a preparation will be eliminated as unsafe following a few tests. Other products which produce injury only following a long latent period are more insidious and require careful and more extensive investigations for appriasal of a proper margin of safety.

Discussion

Dr. Lauffer: This may have an oblique bearing on your very interesting paper, Dr. Draize, but I wonder if you can give us any appraisal of the possible application of radioactive tracers in the determination of ab-

(Continued on page 115)

DESIRABLE G-I TRACT DRUGS

By M. I. GROSSMAN, Ph.D., M.D.

PAIN is the commonest symptom bringing a patient to the doctor. The abdomen is the commonest location for the pain. In other words "pain in the belly" heads most lists of chief complaints which are arranged according to frequency of occurrence. Abdominal pain may be due to organic disease or functional disorder of the abdominal organs, or it may be due to reflexes arising from disturbances in other systems of the body.

In addition to pain, gastrointestinal disorders produce a variety of other important symptoms.

Although we often think of the function of the digestive organs largely in terms of the chemical processes of digestion by the secretions of the digestive glands, it is the motor rather than the secretory activities of the gastrointestinal organs which most frequently cause disorders giving rise to symptoms. This is not to say that there are not important diseases associated with secretory dysfunction. However, a moment's reflection makes it clear that a very large proportion of abdominal discomfort arises primarily from disordered movements of the digestive tube. Of course, I am thinking now of that very large and very important group of disorders which are placed together under the name of "functional bowel disorder."

It is this group of disorders which is primarily responsible for maintaining the impetus in searching for "the ideal antispasmodic." The standard against which new antispasmodics are usually compared is atropine. Simply stated, the objective is to find an orally effective drug with the antispasmodic potency of atropine but without its disturbing side effects of dryness of the mouth, blurring of vision and increase in pulse rate. Of course, even if this objective is realized it will not answer all our needs, because there are some instances of spasm which cannot be released by atropine even when it is given in doses large enough to produce marked side effects. For these an antispasmodic of greater potency than atropine is required.

What we are asking for is essentially a cholinergic blocking agent with specificity for site of action. This problem of diffuseness of action of autonomic drugs is a general one, and the case of the antispasmodics serves as a useful example. This specificity we seek could conceivably be achieved in either of 2 ways: (a) by increasing the specificity for the site of cholinergic-blocking action or (b) by achieving antispasmodic action in whole or part by some mechanism other than cholinergic blocking. Practically, it is important to recognize that all potent antispasmodics now available have a distinct cholinergic-blocking action.

From time to time the claim has been made that one or another of the synthetic antispasmodics has this desired specificity of site of action. But critical examination of the data on which such claims are based reveals that the evidence is weak. It would appear that in most instances the synthetic drug lacks the side effects of atropine only because it also lacks its antispasmodic action. In other words, many synthetic antispasmodics are general cholinergic-blocking agents, like atropine, but requiring a larger dose to yield a given effect.

Parenthetically, I should like to state that actually atropine and belladonna are extremely useful antispasmodics and much of the difficulty with their use arises from failure to recognize that the dose must be adjusted to the individual patient. Marked differences in tolerance and susceptibility exist and the use of a standard dosage schedule will result in overdosage in some patients, and underdosage in others.

As an example of a synthetic antispasmodic I should like to consider Dibutoline, a drug with which I have had some experience. My associates and I found that 10 mg. of Dibutoline subcutaneously would stop certain pains arising from smooth muscle spasm when these were not stopped by 1 mg. of atropine. In these doses both drugs produce about the same amount of decrease in salivary secretion and increase in heart rate. We have, therefore, tentatively concluded that the ratio of antispasmodic action to side effects is greater for Dibutoline than for atropine. Obviously, this conclusion is based largely on clinical impression and requires more objective substantiation. Specifically we need answers to questions of this type: For a given elevation of pulse rate will a certain synthetic drug produce the same, more or less depression of tone and of amplititude of contractions of the colon? Information of this kind is not particularly difficult to obtain and is needed in order to evaluate new drugs soundly.

One of the drawbacks in the use of Dibutoline has been the fact that it is ineffective when given orally. Recently, we have found that the ethosulfate derivative of Dibutoline is quite active when given orally and

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studies on its effectiveness are now in progress. As a matter of fact, quite a large number of orally active synthetic antispasmodics are becoming available and it seems to me that in order to select from among them it is going to be necessary to use some objective measurements of the type I have indicated.

Let us turn now to another important gastroenterological problem, that of peptic ulcer. For a number of years the workers in our laboratory have felt that if some means could be found to stop acid secretion by the stomach this would serve as a very effective means of treating peptic ulcer. I do not wish to go into an extensive discussion on the etiology of peptic ulcer, but a few points require brief comment. Both clinical and experimental evidence indicate that acid must be present in order for a peptic ulcer to develop. Please note that this is not the same as saying that hypersecretion of acid is the cause of ulcer. It is merely stated that secretion of acid is a necessary element in the process of ulceration and the question of whether a disorder in acid secretion is the cause of ulcer can be left open.

At the present time the principal means of combatting the acid of the gastric juice is by the use of antacids. This is a remarkably inefficient process, as is illustrated by the fact that it has been estimated that in order to achieve satisfactory intragastric neutralization it is necessary to take as much as 10 times the amount of antacid that would be required to neutralize the stomach's secretions in vitro.

A much better approach to the problem would be to

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BETTMANN ARCHIVE

BATH PREPARATIONS

By HARRY HILFER

EWING GALLOWAY

BATH preparations are both necessities and luxuries in that they serve both a necessary function in correcting or augmenting the deficiencies of water in hard water areas and, in addition, provide a spiritual lift by making the bath more comfortable. Their purpose is primarily accomplished by the perfume oils incorporated in them, since the addition of the odor causes the increased relaxation as much as does the water itself. They are therefore all characterized by being pleasantly scented so that this prime purpose may be achieved.

There are a large number of bath preparations each serving its own useful function. Probably, the most important are the bath salts, since these, aside from the odor they impart to the tub, are also water softeners. Their sale is therefore greater in hard water than in soft water areas, but since the greater portion of the U. S. is served by hard water, the market is considerable. The purpose of a water softener is to prevent any dissolved calcium or magnesium salts from reacting with soaps. The presence of calcium or magnesium would otherwise cause the soap to precipitate and to minimize the detergent properties expected. The metallic soaps so formed would further be deposited on the body and would have to be worked off. Prevention of this reaction may be accomplished by the prior precipitation of the dissolved alkaline earth metals by the addition of a phosphate or carbonate ion or by the addition of a sequistrant which is capable of holding the metallic ions in solution but renders them incapable of reaction with soaps.

In both salts the sequistrants that may be used conveniently are confined by cost to the polyphosphates. These are available commercially, both the tri polyphosphate and the tetra polyphosphate. Both are excellent sequistrants and the choice of one or the other would depend on the ultimate particle size desired. The tetra phosphate is the more stable towards hydrolysis in water, but since it will not be dissolved until placed in the bath, its greater stability is not an advantage in a bath salt. Neither of the two polyphosphates dissolves too readily in water, but the smaller their particle size the more quickly will they dissolve because of the larger surface presented by the smaller particle.

Sodium sesquicarbonate is in very common use as a bath salt, because of its low price and because its crystals are so well adapted to packaging. The sodium sesquicarbonate crystal is a small white needle, which is well adapted to packaging in glass. Chemically it consists of a double salt of sodium carbonate and sodium bicarbonate and is therefore capable of precipitating the alkaline earth metals by itself. The addition to the bath of the polyphosphate would serve to solubilize the precipitate thus produced which would be an advantage if the water is desired to be kept clear. A mixture of the sodium sesquicarbonate with some polyphosphate in a single preparation would serve this purpose very well. The amount of salts needed for each bath as a water softener would be rather small. Certainly a 2 oz. addi-

tion to the tub would be ample for even these areas containing the highest calcium concentration in its water.

The mechanical addition of the oils and colors to the salts may be accomplished by using one of several methods. The most primitive is to dissolve the dyes and the oils in alcohol and then mix with the salts, than spreading the salts on trays to dry. A more efficient method is first to mix the oils and salts thoroughly and then adding the color and wetting down with a minimum amount of water so that the crystals could be coated more easily.

The colors are used sparingly since they are intended to tint the crystals rather than the water.

If larger crystals are desired, Glauber salts may be used. They will have no effect on water softeners, but the addition of a polyphosphate would remedy that situation.

Bath Oils

Bath oils serve to further enhance the bath by incorporating into it a pleasant fragrance. The bath oil itself consists of the perfume compound dissolved in a suitable vehicle. The nature of the vehicle would be dependent on whether the fragrance is to be allowed to float on the surface or to be distributed throughout the tub. Both types are popular though it would appear offhand that a greater quantity of the odoriferous materials would be volatilized if it were resting on the surface, since the rising water vapor could be more easily saturated in this manner. Such a preparation could be prepared by dissolving the oils in a suitable solvent and used in this fashion. A product such as this could be made where a single drop could spread over the entire water surface so that there would be no scattered droplets on the water's surface. This is accomplished by the addition of a small amount of a wetting agent, such as actyl alcohol. The solvent used could be any of a number of vegetable oils, such as olive oil or the synthetic esters such as butyl stearate or isopropyl myristate. If small quantities per tub are to be used, the essential oil concentration of such a product must necessarily be high and would probably be present in a concentration of at least 20 per cent.

The other type of bath oil, where it is intended that the oil be dispersed throughout the bath, is the more easily prepared. The most prevalent method is to dissolve the oils in sulfonated castor oil in a ration which would ensure its complete dispersion in the water. This ratio varies with different oils but 1.7 seems to be a good average. More recently newer dispersing agents such as the polyethylene glycol derivatives of sorbitan esters have come into use where a much lower ratio is required. Several compounds in this category will disperse the oils when present in a 1.3 ratio. In this formulation the oils are first incorporated into the dispensing agent and the whole is then diluted with water and any other constituent desired. In any preparation of this type it is further desirable to depress the freezing point of the product so that the incidence of freezing could be lowered. The addition of propylene glycol is recommended for this purpose since it is also a good solvent for the essential oils. Since so much of the concentration must be taken up by dispersants, the essential oil concentration of this type of bath oil is considerably lower than in the first type discussed. Therefore, larger amounts are used per bath than in the case of the former. Both types have fairly wide acceptance with the edge probably in favor of the second type. The well-known pine bath oils, for example, are usually in this second category.

The bubble bath's use, though not as great as it used to be, is still important enough to merit consideration. It is designed to produce a voluminous blanket of bubbles which will fill the tub from the water surface to the brim. It will be acceptable if it fulfills this function though it need not necessarily be a good detergent as well. Its sale for adult consumption may have dropped off but it apparently is used to entice, I think that would be the right word, children into the tub. There is a good sale of this product, therefore with this end in view.

Bubble Baths

Bubble baths come in various different forms, as powders and as liquids, with both as far as can be seen enjoying an equal share of the total sales. The powders are made from the available powdered sulfated or sulfonated detergents available, usually mixed with a polyphosphate, or sesquicarbonate for dilution purposes. The active ingredients may be any one of a number of available detergents, such as sodium lauryl sulfate, sodium lauryl sulfacetate, alkyl aryl sulfonates. The alkyl aryl sulfonates have come into fairly wide use recently because of their lower costs, but do not appear to have the foaming propensities of their predecessors. They enjoy a big advantage, however, in their stability towards hydrolysis. The ratio of the active detergent to the diluent is largely determined by a cost factor which is dependent on the final sales price. The concentration of detergent may therefore vary from 10 per cent to 75 per cent.

The preparation of this product is relatively easy since simple mixing is all that is required. If it is necessary that a given weight fill a given container size, care should be exercised, particularly where needle-like crystals, such as sodium sesquicarbonate, are used as fillers, that the particle size is not broken down too far since the product consisting of smaller sized particles would necessarily fill a smaller volume per unit weight.

In testing any of these substances, the pressure of the water used should be constant, since a variation in this variable will produce erratic results. The bubbles are formed by the incorporation of air into the water and by the ability of the water, because of its lowered surface tension, to be able to hold the air so incorporated. A faster stream of water would cause greater air incorporation and vice-versa.

The liquid bubble baths pose another set of problems. Since active material must be dissolved in water, the

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ANTIMALARIALS TODAY

By ALF S. ALVING, M.D.

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THIS PAPER WAS PRESENTED AT THE AMERICAN PHARMACEUTICAL MANUFACTURERS' ASSOCIATION SCIENTIFIC AWARD CEREMONY ON NOVEMBER 29, 1949, AT THE WALDORF-ASTORIA, NEW YORK CITY, NEW YORK.

MALARIA is probably the most important disease in the world. Accurate statistics are unavailable. It is generally agreed that at least three hundred million people are afflicted with the disease and that over three million persons die from it each year. While the most intense effects of malaria occur within the equatorial and subequatorial regions, it has been reported as far North as the Artic Circle and at the extreme tip of South America. Until recently malaria was a serious problem in the Southern part of the United States and was not uncommon throughout most of the country. Although it held intense public interest as the most important medical military problem in the second World War, few indeed realize that it has been a major problem in each of the wars in which we have participated. In fact as recently as the Spanish-American War, malaria and typhoid killed six times as many men as did bullets.

In 1915 the British and French conducted a campaign in the Balkans which was to have more far reaching consequences than could possibly have been foreseen. The Macedonian campaign was undertaken for political objectives—to relieve the hard pressed ally, Serbia, and to check the influence of Germany in the Balkans. Landings were made in Salonika, Greece, against the warnings of several outstanding malariologists. A military campaign was undertaken in a highly malarious area with practically no antimalarial precautions and without adequate training of medical officers in the effective use of quinine or insecticides. The Germans and Austrians opposing the invading forces were without quinine due to the Allied Blockage. By 1916 all armies were immobilized due to the distastrous effects of malaria and a virtual stalemate was established on the Balkan front for two years. At first this appeared to be of advantage to the Germans and almost justified their jibe that Salonika was their greatest concentration

camp—"an enemy Army, prisoner of itself." However, by 1918 proper antimalarial measures, including the compulsory taking of daily quinine, gave the Allied forces the advantage in the campaign which eventually resulted in the fall of Bulgaria and the first breach in the German Alliance. The Macedonian campaign, therefore, taught the important lesson that malaria fights on the side that can best control it. The Germans with typical foresight took advantage of their bitter experience and inaugurated an extensive program for the synthesis of antimalarial drugs after the war. In 1927 the chemists in the laboratories of I. G. Farbenindustrie at Elberfeld developed a synthetic chemical now called plasmochin or pamaquin.

A word about the diseases which we ordinarily call "malaria." In man there are really four diseases but only two of these are of importance. One is produced by *Plasmodium vivax* which causes few deaths but has a great tendency to relapse. Vivax malaria is also called *benign tertian malaria* because paroxysms consisting of severe chills, fever and headaches due to the development of new broods of parasites within the red blood cells occur on alternate days. The second important malarial infection is caused by *Plasmodium falciparum*. This disease has no tendency to relapse if treated vigorously with suppressive drugs but has a high mortality rate in susceptible individuals if untreated. It is called *malignant tertian malaria* and may present variable clinical manifestations.

At this point it is probably wise to define the four different properties that may be possessed by antimalarial drugs. First, they may have *suppressive* effect in which case we know, as the result of very recent research, that they act against the blood stages of the disease, which produce clinical symptoms, but do not eradicate the tissue stages of the parasites, which cause relapse. Secondly, drugs are *prophylactic* if their action is against the sporozoites which the mosquito injects or against the primary tissue stages which develop during the asymptomatic period prior to the onset of the first clinical attack. Drugs may affect only the gametocytes, the sexual parasites in the blood, which cause no symptoms in the human host but are responsible for the transmission of the disease to the mosquito when she sucks her blood meal. Finally, *curative* drugs eradicate *all* stages of the parasites and, thereby, lead to radical cure.

Quinine, the standard antimalarial drug prior to World War I, is purely suppressive in vivax infections. It affects only the blood stages and does not influence the relapse rate. It may suppress (and, thereby, cure) falcuparum malaria, though some strains of parasites are highly resistant to the drug.

Plasmochin, the drug synthesized by the Germans, has several unusual qualities which were first demonstrated by British investigators in India before World War II. It is prophylactic in both vivax and falciparum infections, but unfortunately, only in extremely toxic doses. Its curative properties in vivax malaria are manifest by great reduction in the relapse rate of the disease after treatment with this drug in combination with quinine. In small doses, it abolishes the parasites which transmit the disease to the mosquito, but it has relatively little effect on the blood forms of malaria that cause clinical symptoms. Its great drawback is its toxicity which is greater in the darker skinned races and is so great in all individuals as to preclude prolonged administration in endemic areas.

The obvious toxicity of plasmochin led the Germans to continue investigations and in 1933, atabrine was developed. The enthusiasm of early reports of the effectiveness of atabrine in the field was soon dimmed by reports of severe toxicity. By the beginning of

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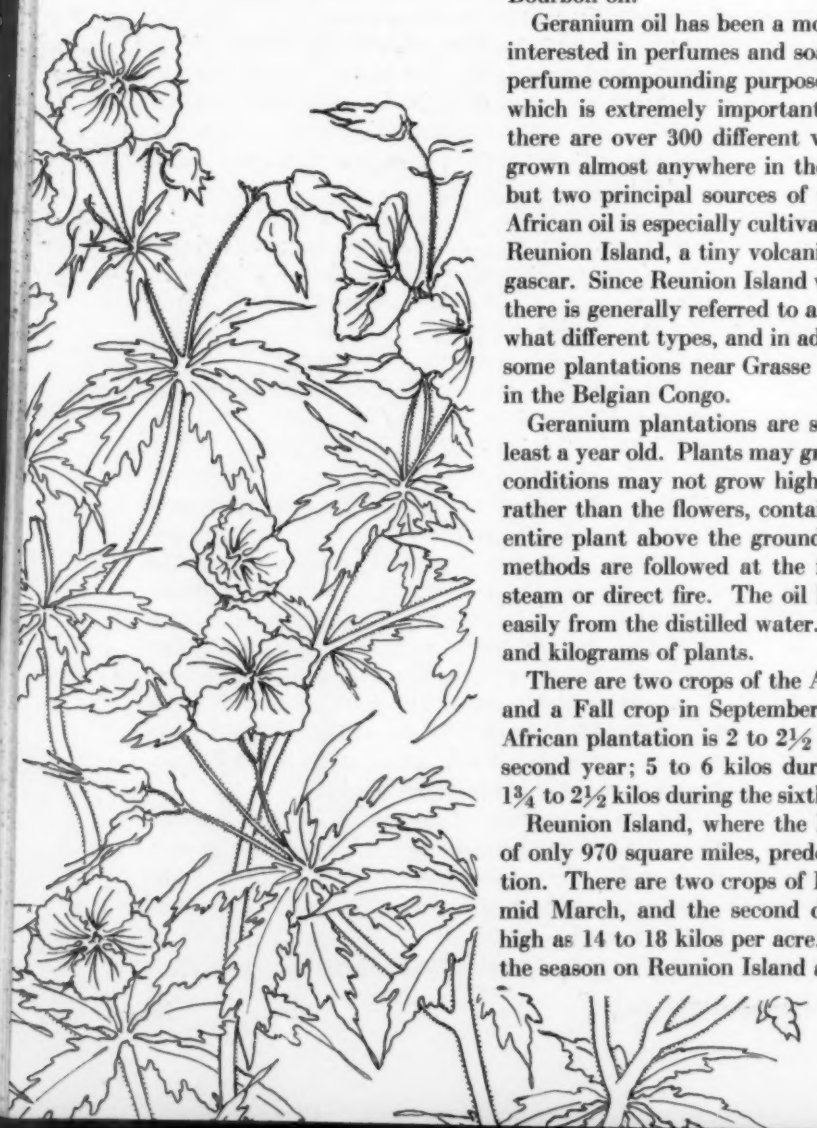
GERANIUM OIL SUPPLIES

GERANIUM oil, probably as widely used for perfuming purposes as any essential oil, continues to be in short supply with a continuation of high price levels which first resulted from war conditions, but which failed to disappear when the war was over. Generally priced below $4.00 per pound prior to 1940, geranium oil reached a peak of $30.00 during 1942, but generally maintained a range of about $12.00 to $16.00 during the war years. However, instead of declining when the war closed, geranium oil not only maintained its high price levels, but soared even higher—to a top of $19.00—during 1946 and 1947. However, there was some recession in prices during 1948 when the high reached for the African oil was $14.00, against a low of $10.00, and a high for the Bourbon oil of $11.50, against a low of $7.75. But during 1949 the market did not decline further, but rather, it climbed part way back with a high for the year of $14.50 for both types of oil, against a low of $9.50 for the African oil, and a low of $8.25 for the Bourbon oil.

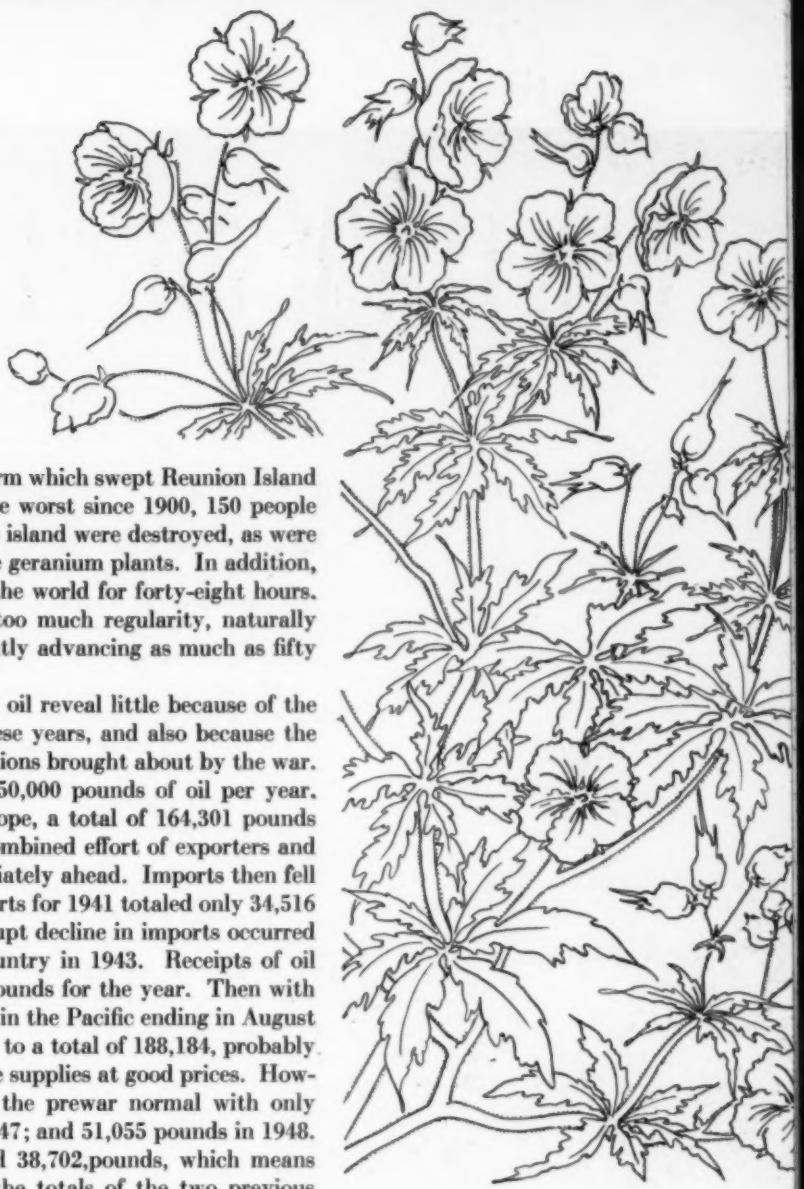


Geranium oil has been a most popular perfuming agent as long as man has been interested in perfumes and soap. Not only is the oil itself used for perfuming and perfume compounding purposes, but it is also used as source of rhodinol, an isolate which is extremely important in the creation of perfume compounds. Although there are over 300 different varieties of the geranium plant, and while it can be grown almost anywhere in the world under varying climatic conditions, there are but two principal sources of the oil. These are French North Africa where the African oil is especially cultivated in the Mitidja valley east of Algiers; and French Reunion Island, a tiny volcanic island situated in the Indian Ocean just off Madagascar. Since Reunion Island was known until 1848 as Bourbon Island, the oil from there is generally referred to as Bourbon geranium oil. These two oils are of somewhat different types, and in addition to these two main sources of supply, there are some plantations near Grasse in French Morocco, in Kenya (English Africa) and in the Belgian Congo.

Geranium plantations are started with shoots taken from full-grown plants at least a year old. Plants may grow three to five feet high, but under adverse climatic conditions may not grow higher than one and a half feet. The leaves and stems, rather than the flowers, contain the greater part of the essential oil, so nearly the entire plant above the ground is harvested for distillation. Ordinary distillation methods are followed at the factories, generally in large copper stills employing steam or direct fire. The oil has a specific gravity of less than 1, so it separates easily from the distilled water. The normal yield is about one kilogram per thousand kilograms of plants.

There are two crops of the African oil annually, a Spring crop in May and June, and a Fall crop in September and October. The normal yield per acre from an African plantation is 2 to 2½ kilos during the first year; 10 to 12 kilos during the second year; 5 to 6 kilos during each of the third, fourth, and fifth years; and 1¾ to 2½ kilos during the sixth year.

Reunion Island, where the Bourbon geranium oil is produced, has a total area of only 970 square miles, predominently mountainous and of irregular lava formation. There are two crops of Bourbon oil annually, the first from mid January to mid March, and the second during October and November. The yield runs as high as 14 to 18 kilos per acre. But cyclonic storms are frequent at the change of the season on Reunion Island as they are all over the Indian Ocean. These storms



do great damage as exemplified by reports of the storm which swept Reunion Island on January 25, 1948. In this storm, which was the worst since 1900, 150 people were killed, seventy per cent of the dwellings on the island were destroyed, as were fifty per cent of the cattle and eighty per cent of the geranium plants. In addition, the island was completely cut off from the rest of the world for forty-eight hours. These seasonal cyclones, which occur with much too much regularity, naturally affect the price of geranium oil, the market frequently advancing as much as fifty per cent following such ruinous disturbances.

Import figures of the last ten years for geranium oil reveal little because of the fact that war conditions prevailed during six of these years, and also because the years following the war have been affected by conditions brought about by the war. Prior to 1940, imports totaled about 125,000 to 150,000 pounds of oil per year. In 1940, however, with the war under way in Europe, a total of 164,301 pounds was brought into the country, probably due to a combined effort of exporters and importers who foresaw a prolonged blockade immediately ahead. Imports then fell sharply as war conditions became more acute. Imports for 1941 totaled only 34,516 pounds, and for 1942, 33,540 pounds. Then an abrupt decline in imports occurred with only 6,308 pounds being brought into the country in 1943. Receipts of oil for 1944 improved materially to a total of 68,199 pounds for the year. Then with the war in Europe ending in May 1945, and the war in the Pacific ending in August of the same year, imports rose above prewar normal to a total of 188,184, probably due to foreign holders' desirability of unloading large supplies at good prices. However, imports for the following years were below the prewar normal with only 99,546 pounds arriving in 1946; 52,813 pounds in 1947; and 51,055 pounds in 1948. Imports for the first seven months of 1949 totaled 38,702,pounds, which means that the total for that year was probably above the totals of the two previous years.

During the war, production naturally declined as it was impossible to export the oil in any quantity due to the blockades existing throughout the world. Large parts of such material as was available in producing centers was quietly accumulated by speculators abroad who held the oil until the war ended and the oil could again be exported. The oil in the hands of speculators was the oil that was available in such large quantity immediately after the war was over, and since high prices could be obtained from geranium-starved consumers in this country, these stocks moved into consuming channels rather quickly. Now this oil has practically disappeared and the consumers must depend upon the oil that is produced from the current crops. And, since living costs have advanced from thirty to fifty per cent in the producing centers, the prices demanded for oil are correspondingly higher.

However, the cost of living of the producers of the oil is not the major factor in the market price for the oil at any given time. Rather is the price dependent upon the relationship between supply and demand. The living cost is the underlying base, however, since if prices fall below the level at which a living wage can be paid the producers, output declines, and thus the price is naturally forced up again. Demand now stands at a much higher level with relation to supplies for the reason that Europe is again a buyer of supplies. No longer are sellers of geranium oil mainly dependent upon this country as was the case in recent years. As the European countries recover from their postwar depressions—principally due to the

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WIDE WORLD

NEW VIEWS ON VITAMIN A Part II

By MILTON A. LESSER

There is no question but that the vitamin A picture, both economically and clinically, will be greatly influenced by the production of synthetic vitamin A. While small quantities of synthetic vitamin A are currently being produced, its large-scale manufacture for the commercial market is now being readied by one of the leading vitamin makers.[22]

Resulting from many years of intensive, often disappointing research, the commercial production of synthetic vitamin remains a very complicated, evolved procedure requiring highly specialized equipment, careful control, and considerable "know how." However, it is not the purpose here to go into a discussion of the several synthesis, since details on the processes

are available in the patent and technical literature.[33-41] Nonetheless, it should be mentioned that the manufacture of the synthetic vitamin already has had an influence on the position of certain raw materials. For example, the need for beta-ionone, used as a starting point in most of the methods, has had an effect on the market for lemongrass oil and other materials containing citral, which is used to make this starting material.

Tests on[38-42] the synthetic vitamin A made by various methods show that its biologic and physiologic characteristics and its chemical and physical properties are identical with those of the natural products. Like the highly purified natural forms, synthetic vitamin A can be provided as the alcohol, the acetate or as an ester, generally as the palmitate.

The availability of pure synthetic products of constant, dependable properties obviously opens up new vistas of research in the nutritional and clinical fields. The use of a material free of the irrelevant compounds associated with natural (e.g. fish liver oil) products will permit investigators to obtain and evaluate more clear-cut effects. In the past it has not been uncommon for observers to attribute various results to the materials associated with vitamin A rather than to the vitamin itself.

The ready availability of the purer products of synthesis will also permit a fuller evaluation of the form of vitamin A most suitable for the treatment of a particular condition. As matter of fact work along such lines has already been reported by McCoord and his associates.[43] They studied the rate of absorption of alcohol and ester vitamin A in infants, children and adults, and also in individuals with various disorders. In the latter case, patients suffering from celiac disease, sprue, colitis, and giardiasis absorbed both forms of vitamin A poorly, while children with cystic fibrosis of the pancreas absorbed ester vitamin A poorly, but the alcohol form much better.

There are certain other advantages in the synthetic form which warrant mention. One outstanding superiority of course lies in the freedom from the fishy odor and taste associated with natural vitamin A preparations. Elimination of the fishy odor and taste not only assures better tolerance by patients but also spares them the fishy after-taste and eructations commonly encountered with the liver oil products. In addition, the synthetic form helps to eliminate the problem of the hypersensitive patient who shows an idosyncracy to fish oil-derived vitamin A.

Synthetic vitamin A is subject to the same oxidative changes and loss of activity as might be encountered, for example, with a highly purified concentrate. However, because of their greater freedom from extranenous substances, the synthetic forms permit a greater specificity in the selection of antioxidants or stabilizing agents. This, in turn, will become a major factor in the longer shelf life expected of products containing synthetic vitamin A. It also helps to assure the availability of greater quantities of the nutritional factor for absorption and assimilation.

Over the years, many antioxidants have been investigated for their efficacy in maintaining the potency of vitamin A. Comparatively few have proved satisfactory. As remarked by Butler,[7] many of the compounds investigated as possible antioxidants have not yet received the approval of the Food and Drug Administration, which must pass on the suitability of such agents.

There is quite general agreement, however, that vitamin E or alpha-tocopherol is perhaps the best antioxidant for vitamin A. In addition to its action as a protective for vitamin A products, this substance also exerts important physiol gic effects in connection with the utilization of vitamin A. Thus, Keddie[44] has cited studies which show that tocopherol functions as an antioxidant in the gastroenteric tract to protect carotene and vitamin A. This effect depends on the presence of vitamin E in the tract itself, and it provides more protection if it is given at the same time as the vitamin A. Vitamin E, he notes, also protects parenterally injected vitamin A.

The stability and utilization of vitamin A can also be influenced by the vehicle or solvent in which it is dissolved. According to U.S.P. XIII, Oleo-vitamin A may be made by diluting fish liver oil with an edible vegetable oil or by making a solution of a vitamin A concentrate in an edible vegetable oil. Similarly, peanut oil is mentioned in the British Pharmacopoeia (1948) as an example of a solvent for preparing vitamin A solutions. As an alternative to the use of such a vehicle, Basu and Bhattacharya[45] have recently proposed the use of ethyl oleate as a solvent for vitamin A. From their work it appears that the rate of loss of the vitamin in ethyl oleate is practically the same as in peanut oil, both with or without the addition of an antioxidant (e.g. 0.05 propyl gallate). They also point out that ethyl oleate is suitable for the purpose because it is easily prepared from oleic acid, is readily assimilated, and has already been incorporated in other pharmaceutical preparations.

Also worth citing are investigations[46] on the stability of vitamin A acetate under laboratory conditions. The results show that the vitamin, in the crystalline state or when dissolved in oils of low peroxide activity, may be stored without appreciable deterioration for considerable periods of time. It was found that when the acetate is dissolved in refined cottonseed oil, it is sufficiently stable to warrant its use as a vitamin A standard. It was also observed that vitamin A acetate may be dissolved in any one of several organic solvents (e.g. cyclohexane or isopropyl alcohol). This yields solutions that can be stored with more than the required stability for use as vitamin A standards in spectrophotometric and chemicophysical studies.

Through the use of new methods, aqueous media can also be made to serve as vehicles for oil-soluble vitamin A. Among the landmarks of vitamin A progress are the processes for dispersing this nutritional factor in aqueous vehicles for use as such or in combina-

tion with other vitamins, including the water-soluble and the oil-soluble types.

For example, Buxton and Lipsius[47] have found that stable, completely water-dispersible, multivitamin compositions containing both fat-soluble and water-soluble vitamins can be prepared readily by incorporating the vitamins into a solvent consisting of ethyl alcohol and a blending solvent such as glycerine or lactic acid or a combination of the two. Such multivitamin compositions can be dispersed easily in aqueous media so as to produce relatively clear disperisons of high potencies, without any separation of the oily, fat-soluble vitamin concentrates. The products made in this way can be added to aqueous food preparations like milk, coffee, tea, chocolate or other flavored drinks and to pharmaceutical preparations such as tonics or the like.

More recently, if has been found[48] that the fat-soluble vitamins alone or a mixture of fat-soluble and water-soluble vitamins may be incorporated in glycerine to produce stable, nontoxic emulsions. This is achieved through the use of a small amount of an alcohol-soluble protein, like gliadin and zein, or a mixture of such agents. Thus, the vitamins suitable for incorporation in glycerine are not only the fat-soluble types A, D and E, but also the water-soluble vitamins of the B complex, and vitamin C. A product based on this patent is now on the market.

Probably the most important processes, however, are those developed by Freedman and Green.[49] Not only do the owners of this patent produce aqueous dispersions containing vitamin A, but similar products are also made by licensees under this basic patent. These include several of the country's leading pharmaceutical houses. By the methods described in this patent, clear, highly potent aqueous solutions are made, which can be further diluted without loss of clarity. Serving as a source of dietary vitamin A, the aqueous solution may also be diluted with milk, soup, fruit juice or other beverages for oral ingestion. Moreover, the solution may be filled into ampoules and sterilized for parenteral administration as a source of vitamin A for therapeutic purposes.

In tracing the development of this process, Freedman[50] has pointed out that a completely water-miscible or water-solubilized form of the fat-soluble vitamins had long been needed. Alcohol had been tried, but its several disadvantages had stimulated the search for a more practical solution of the problem. As a result of this search, interest was focused on water-soluble polyoxyalkylene derivatives of certain higher fatty acids, various sugars or their anhydrides, and partial fatty acid esters of sugars or their anhydrides. Tests to determine the most suitable surface active agent led to the use of a product having high solubilizing potential and fully meeting such requirements as non-toxicity, stability and freedom from disagreeable odor or taste.

During this discussion, Freedman also pointed to the important discovery that the fat-soluble vitamins are absorbed and utilized much more rapidly from the aqueous solutions than from an oily medium. This statement is, of course, based on extensive laboratory and clinical investigation.[51] For example, in studies on children, Kramer, Sobel and Gottfried[52] found that vitamin A absorption, as measured by vitamin A tolerance curves in blood serum, was far better with an aqueous dispersion of fish liver oil than with fish liver oil itself. This was true in children with either impaired or unimpaired intestinal absorption. In other tests it was found[53] that vitamin A absorption in the newborn is favored if the vitamin is given in an aqueous dispersion. Adults also showed improved absorption with such aqueous preparations.

As a follow-up to such studies, Sobel and his associates[54] made investigations to determine whether an increase in the blood level concentration following aqueous vitamin A actually represented an increased absorption. The liver storage test was used as the criterion for such absorption. By this method it was shown that, in young rats, liver storage of vitamin A from fish liver oil dispersed in water was three times as great as the same vitamin A fraction when administered in oil.

Following similar experiments on animals, Lewis and his colleagues[55] concluded that in humans "superior storage of vitamin A would result following the ingestion of the aqueous product." Clinical studies were also made to determine absorption in persons with diseases characterized by poor fat absorption. In a case each of cystic fibrosis of the pancreas and obstructive jaundice, it was found that excellent rises in vitamin A concentration in the blood followed the administration of an aqueous preparation. In contrast, a flat absorption curve followed the use of an oily product.

Since the therapeutic usefulness of vitamin A has been limited by its slow absorption, especially in such disease states as celiac disease, pancreatic fibrosis and bile duct obstruction,[56] it is apparent that the aqueous dispersions offer considerable promise in the treatment of these and other conditions characterized by faulty utilization of vitamin A.

Of course the chief indications for vitamin A administration are the prevention and control of vitamin A deficiency. The well established therapeutic indications for vitamin A, as shown by the "allowable claims" listed in "New and Nonofficial Remedies"[57] include the following conditions caused by vitamin A deficiency: (a) xerophthalmia, (b) night blindness or nyctalopia, and (c) certain types of hyperkeratosis of the skin. As noted by Gyorgy,[28] it is now generally recognized that it is fallacious to claim that vitamin A exerts an anti-infective action.

There are, however, a number of conditions in which the administration of vitamin A appears to offer therapeutic potentialities. This seems to be especially true in the field of dermatology. Thus, in his summary of the uses of vitamin therapy in dermatology, Herschmann[58] states that vitamin A is of definite value in phrynoderina (keratosis pilaris) and that it is apparently

(*Continued on page 106*)

LIVER PRODUCTS AND THE F.D.A.

THE subject of liver preparations has been a rather delicate one between the Food and Drug Administration and the pharmaceutical manufacturers for the past year because of a move on the part of the FDA to look with considerable disfavor upon the current labeling of these products. The FDA contended that unsubstantiated claims were being made and there was a complete lack of uniform standards. In a move to meet the basic objections of FDA, the National Formulary has devised standards for four of the liver preparations and these will be included in the next issue of the N.F. Now the FDA plans to limit its enforcement to those liver preparations which fail to conform to the standards contained in the U.S.P. or to these four new standards in the forthcoming N.F.

Any product which does not conform to the standards of the U.S.P. or N.F. will have to stand on its own feet and justify its reasons for differing from the official standards. The FDA will frown on the making of any claims for the products or giving any indications of particular ailments which might be effective. Any therapeutic claims for liver products will have to be justified, says the FDA.

A statement issued late last month by the Food and Drug Administration follows:

"Since the retorts of Dr. Minot and his collaborators on the effects of liver in the treatment of pernicious anemia, the value of that drug for pernicious anemia, sprue, and certain other conditions characterized by a macrocytic anemia has become well established. In the Eleventh Revision of the United States Pharmacopoeia, official from June 1, 1936, Liquid Extract of Liver, Parenteral Solution of Liver, and Dried Liver Extract were recognized. That these items were intended for the treatment of pernicious anemia is indicated by the requirement that they comply with the standardization program set up under the heading 'Standardization of Products for the Treatment of Pernicious Anemia.'

"Recently, it has been demonstrated that vitamin B_{12} is an important constituent, if not the only constituent, of liver responsible for its antipernicious anemia properties.

"Dried liver and various fractions of liver not offered for the treatment of pernicious anemia have appeared upon the market. These reach consumers in a variety of forms usually in combination with iron compounds or other therapeutically active substances. The labelings describe these liver derivatives in various ways such as 'Liver Concentrate,' 'Liver Concentrate 1:20,' etc. but usually give little information as to just what they are or as to the physiologic or therapeutic effects ascribable to them.

"The Food and Drug Administration has been concerned about the identity and usefulness of liver preparations other than those described in the Pharmacopoeia and standardized as provided therein.

"The National Formulary Revision Committee has voted to include in the Ninth Edition of the Formulary, to be published in 1950, the following four liver preparations:

1. Desiccated Liver. This is the dehydrated gland said to be equivalent to approximately four times its weight of fresh liver.
2. Liver Concentrate. This is a water, or acidified water, extract of liver, dried and powdered.
3. Liver Fraction 1. This is a 70 per cent alcohol-soluble fraction of Liver Concentrate reduced to paste form.
4. Liver Fraction 2. This is a 70 per cent alcohol-insoluble fraction of Liver Concentrate reduced to a powder.

It is logical to expect that these four liver preparations will supersede the numerous unofficial liver preparations heretofore used. These several official titles will be regarded as 'common or usual' names for purposes of compliance with the provisions of the Federal Food, Drug, and Cosmetic Act. While the designation of these articles as N.F. will not be permissible until the National Formulary monographs become effective, the Food and Drug Administration will take no exception to the sale before that date of products conforming to the proposed definitions under these names. In case any manufacturer uses a preparation of liver different from one of the U.S.P. or N.F. preparations, it will be his obligation to designate such preparation by a name which will clearly differentiate it from any official title and which will give full information as to its character.

"The Food and Drug Administration must evaluate all therapeutic claims made in the labelings of official products; and in the case of unofficial products must determine the circumstances under which a liver preparation is to be regarded as an 'active' or nutritionally significant ingredient, justifying reference to liver in the name of the article or elsewhere in its labeling. In reaching its conclusions, the Administration wishes to consider all available information.

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FATTY ALCOHOL SULFATES

By R. PANTALEONI,
J. A. SHANKS and
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Fine Chemicals Division, E. I. duPont de Nemours & Co.
Presented before the Scientific Section of The Toilet Goods Association.

THE fatty alcohol sulfates known by the trade name of "Duponol" products are being used to an increasing extent for the manufacture of shampoos. This paper will describe the characteristics of these products for use in shampoos.

Fatty Alcohol Sulfate A ("Duponol)) WA Paste) has been used for many years for the manufacture of shampoos. More recently three new fatty alcohol sulfates have been developed, namely

Fatty Alcohol Sulfate B ("Duponol" WAT)
Fatty Alcohol Sulfate C ("Duponol" SN)
Fatty Alcohol Sulfate D ("Duponol" ST)

All three are sulfates of mixed fatty alcohols. One type is a sodium salt; the other two types are triethanolamine salts.

The reason for four types of fatty alcohol sulfates is, of course, found in their different properties. These differences in properties arise from selected mixtures of the alcohols from which they are prepared. It has been found that a sulfate prepared from a very pure fatty alcohol does not possess the desirable detergent and foaming characteristics which are developed in a product manufactured from a mixture of fatty alcohols.

BLACK STARR

Fatty alcohol sulfate A, which is a white paste at temperatures below 27 °C., is generally used for paste type shampoos and some liquid cream shampoos, which are called milky shampoos.

Fatty alcohol sulfate C, which is a straw-yellow liquid above 10 °C., is used both for liquid cream shampoos and clear type shampoos.

Fatty alcohol sulfate B, an amber liquid above 5 °C., is largely used for clear type shampoos.

Fatty alcohol sulfate D, a straw-yellow liquid above 5 ° C., is used for some liquid cream shampoos but more particularly for clear type shampoos requiring clarity under the most stringent conditions.

Fatty alcohol sulfate D forms stable liquid cream shampoos in some instances when Fatty alcohol sulfates A and C fail.

All four products have a higher degree of detergency than is required for the mere removal of soil. This is desirable because formulations demand the use of detergent products which can do more than merely remove soil. Materials are added to shampoos to improve their final effect on the hair and to enhance their appearance and appeal to the customer. The nature of the adjuvants and their mutual effect on each other are among the principal factors to be considered in selecting the optimum alcohol sulfate product.

One of the effects of adjuvants is illustrated by the following foam data. Form readings are given for 100 cc's of a 1 per cent solution of fatty alcohol sulfate A in distilled water and the same solution to which

0.5 per cent increments, based on the fatty alcohol sulfate, of lanolin, magnesium stearate and glyceryl monolaurate were added individually. Mechanical action was supplied by inverting a foam cylinder ten times.

Foam Readings for 1% Solution Fatty Alcohol Sulfate A in Distilled Water—27° C.

	% of Additive	*Lanolin*	*Magnesium Stearate*	*Glyceryl Monolaurate*
Control	**0**	**500**	**500**	**500**
	0.5	**450**	**420**	**500**
	1.0	**365**	**310**	**470**
	1.5	**360**	**320**	**450**
	2.0	**415**	**330**	**475**
	2.5	**500**	**350**	**495**

It appears that magnesium stearate and lanolin decrease the foaming properties of fatty alcohol sulfate A significantly; whereas glyceryl monolaurate has an almost insignificant effect. The minimum exhibited by lanolin has been confirmed in replicate tests. Tests with the other fatty alcohol sulfates give similar results.

ES FOR SHAMPOO

Foam readings should, however, be interpreted as only a tentative indication of actual foaming performance during shampooing.

An example of the effect of calcium and magnesium ions on the surface activity of these products is given by the suds stability test. One liter of a 1 per cent solution of a fatty alcohol sulfate is agitated mechanically using a paddle type screen while one gram increments of synthetic soil are added to the solution. A record is made of the quantity of soil required to reduce the initial foam in half, and to reduce the foam to zero. The soil comprises 74 parts mineral oil, 1 part carbon black and 25 parts hydrated lanolin. The results are:

In water of zero hardness.

Fatty Alcohol Sulfate	*One-Half Initial Foam-Gr. of Soil*	*Zero Foam-Gr. of Soil*
A	**40**	**65**
B	**20**	**40**
C	**40**	**65**
D	**20**	**40**

In water of 360 ppm hardness.

A	**30**	**45**
B	**30**	**45**
C	**30**	**45**
D	**30**	**50**

The results indicate that these products are capable of withstanding a large load of soil either in soft or hard water.

The actual application of the different fatty alcohol sulfates in formulating shampoos is illustrated by the standard shampoo formulas, which follow. The development of standard shampoos, particularly for the liquid cream type, proved to be quite a project. We verified the saying that liquid emulsions are better known for their perversity than for their stability.

A number of formulas were developed which are definitely stable, exhibiting neither separation nor creaming during the period of observation of three months. Heating and freezing stability tests have not been run on all the shampoos.

It should be emphasized that the standard formulas which follow are for basic mixtures suitable for individual modifications. They are not finished shampoo formulas but require refinements known to cosmetic and consulting chemists.

Paste Type Shampoo

Fatty Alcohol Sulfate A	**50**
Sodium Stearate	**8**
Water	**41**
Lanolin	**1**
	100

Procedure

These ingredients are heated together with constant stirring to approximately 85° C. When the mixture is homogeneous it is cooled slowly with stirring. Perfume may be added while the shampoo is still molten (45° C.)

This formula produces a thick white paste with a pearly appearance. The shampoo is stable to oven testing up to 45° C. In the process of manufacture, the pearliness will not develop until the system has reached equilibrium between the crystalline and non-crystalline phase. Generally it requires two to seven days for the development of pearliness.

Liquid Cream Shampoo

Fatty Alcohol Sulfate A	**30**
Magnesium Stearate	**1**
Polyvinyl Alcohol 10% Sol.	**20.5**
Methyl Cellulose 3% Sol.	**9**
Water	**38**
Lanolin	**0.5**
Glyceryl Monolaurate	**1**
	100.0

Procedure

The magnesium stearate is pasted with the fatty alcohol sulfate, then the polyvinyl alcohol, methyl cellulose and water are each added separately to make the water phase. The mixture is agitated while heating to 71° C. The oil phase is brought to the same temperature and the water phase is added with agitation.

This formulation produces a somewhat viscous milky shampoo with a pearly appearance. The addition of color enhances the pearly effect. The magnesium stearate tends to whiten and increase the viscosity of the shampoo. Both polyvinyl alcohol and methyl cellulose give the shampoo body and tack.

(Continued on page 112)

For a touch of packaging excellence
many prominent manufacturers specify
Carr-Lowrey opal jars.
CARR-LOWREY
GLASS CO.
Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: MERCHANDISE MART

PACKAGING AND SELLING

SHAKE-UP IN CO-OP ADVERTISING OVERDUE

SOME day there will be a terrific shakedown in cooperative newspaper advertising. The reason this shakedown has not yet come about is because every one concerned is still too damn lazy to bother. The people involved in this mess, which undoubtedly continues the largest provable economic waste in advertising, are the newspaper publisher, the manufacturer and the retail store.

The newspaper publisher probably has the least responsibility and the least opportunity for cleaning up this mess. Nevertheless, he is seriously involved because a very large part of his revenue comes from this kind of advertising, and because a large part of the wastage of his space is going on right under his nose. The very least the newspaper publisher could do would be to get all of the facts on this situation in an authentic and very comprehensive survey and then to start an educational campaign among manufacturers, and particularly with stores in his locality, so that some of this waste could be eliminated.

The manufacturer is much more directly to blame because he is spending money and in a high percentage of cases, he is putting up all the money.

When cooperative advertising falls on its face for any one of a number of reasons, including poor store advertising copy or distortion of the manufacturer's carefully thought-out copy and failure of the store to follow through with the advertising, then this is the manufacturer's fault in that he should demand fair treatment and his money's worth from this advertising.

There is no question that the manufacturer has been in a very poor bargaining position because it has been a very sad sort of store that has not for several years had more cooperative advertising offered to it than it could squeeze into a newspaper or budget for any one department.

The heavy blame for cooperative advertising must fall on the retail store. Many retailers realize that there is a high percentage of wastage of advertising money, and that some of the blame for this wastage rests right in their own advertising department and in their store administrative set-up.

At a recent meeting of one of the largest retail associations, the executive of a big store made the statement that a very high percentage of money spent for advertising was completely wasted. He even went so far as to suggest some of the ways in which this waste took place, such as the bad timing of the merchandise offered, but he failed to do anything about it except to register a complaint.

One of the largest household appliance manufacturers recently stated some figures on a retail promotion which show clearly just how thoroughly retail stores are contributing to the wastage of advertising money invested with them to promote sales through their stores. This promotion was for a household utility which has a wide general market and an excellent position in the trade. It was a good promotion with several display features that made an excellent appeal to the public. In one very large metropolitan city a leading department store gave this promotion a one-thousand line ad in the city's leading newspaper. This advertisement cost both the manufacturer and the retailer a good chunk of money. During the following week only 13 of these special household utilities were sold at a retail price of slightly less than $25.00.

During this same week the suburban store of another large city a few hundred miles away, with a very much smaller household department, gave two columns by four inches to the same promotion in a small local newspaper. During the next day this store sold one of these products every hour of that day and the results continued to be excellent for several weeks after that.

What took place in these two stores is as follows. When a customer read the advertisement in the big metropolitan newspaper and went into the big department store, she found that none o the clerks on the ground floor knew anything about this promotion. If this woman was persistent she was finally vaguely directed to the appliance department where she found numerous groups of competitive products all lined up with no indication of the promotion or identification of the one advertised. If this customer was unusually persistent and demanded some information about the product so vigorously advertised, she was finally able to wean one of the store clerks away from the section where the major appliances with a high unit value were, and then she found that the clerks knew nothing about this particular product, except that vaguely there was an advertisement on it. In other words, the 13 women who bought this product in the metropolitan department store were very determined characters who fought their way through the various walls of indifference to get this product.

On the other hand, in the small store every employee in this store was told about the advertisement, given an advanced proof and other information. Then in the appliance department a special table was set up near the escalator with a very fine display and a clerk in attendance with full information.

Is it any wonder that the little store with a fraction of the money invested in advertising many times outsold the big store.

The shakeup in cooperative advertising will come when newspaper publishers decide that they cannot continue to hold the volume of their cooperative advertising if it continues to fall flat on its face in producing results in so many cases. At this time the publisher will decide that it is high time that he should do something about it. The shakeup will also come when the manufacturer decides that in spite of the tremendous inherent value in cooperative advertising, and in spite of the fact that retailers love it, that it is being so abused, ignored and neglected by the retailer that

it is not paying its board and that it will have to be discontinued unless the retailer does an about-face and gives a fair deal. The shakeup will definitely come when the retailer realizes that the loss of sales because of the mismanagement of cooperative advertising in his own store is a serious policy and administrative weakness.

It does not make too much difference whether some of the retailer's money is in this advertising or whether the manufacturer foots the full bill. The fact the retailer must face is that newspaper advertising is the most potent force for increasing sales in his store, and that every bit of advertising which appears over the name of his store and which fails to produce sales for any reason, and particularly for administrative fall down, is just so much lost business that either goes to a competitor or is lost in the limbo of unborn sales.

The retailer may even wake up to the idea some day, that a frustrated customer whose interest has been aroused by an advertisement and then who fails to receive the interest and information which she has a right to expect when she sees an advertisement, is not building good will and increasing traffic for the store.

The pity is that this whole situation could be cleared up with a little study and a little hard work. There is no instrument for making sales that can excell the cooperative advertisement properly prepared and properly timed and fully coordinated with intelligent store selling. It is a pity that down right mental and physical laziness should delay a solution.

Success is a Hazard

Strange as it may seem, there are many industries in which success can bring a distinct hazard. No one is ever loath to assume this risk, and as a matter of fact everyone in business spends his eight hours a day or more in an energetic struggle to get into a position where he is liable to this hazard.

This industry of cosmetics and pharmaceuticals is one of the industries that is peculiarly susceptible to the risk of success. And strangely enough many of the people who reach this exposed position give very little thought or have very little comprehension of the risks that lurk around every forward step they make toward industry leadership.

The reason for this hazard lies in the fact that a very large percentage of real business successes are based upon a formula. This formula may be a plan of distribution, it may be a kind of package that is unique and distinctive, but more often it is a formula of the product. When a business soars to success on any one of these or other formulas, there is a natural reluctance and even a fear to change this formula. This fear and reluctance usually persists until long after a new and vigorous competitor with a new and better formula is firmly entrenched.

The more successful a business man has been in the past and the more conspicuous his trade leadership has been, the greater is the risk and hazard for making any change in any kind of formula with which his business personality and his leadership has been identified. This is where the smaller or struggling business can have an enormous advantage. To such a small business, particularly when they are struggling along without any easily identified formula, the quick jump in adapting the new product or method which is becoming a success entails very little risk and may, in fact, be the very thing that the small fellow has been hoping and praying for.

We have recently seen some very interesting illustrations of this theory. During the last two years the old established leaders in the dentifrice market have been subjected to a very heavy attack by a new theory and a new formula for tooth care. These established companies, after spending many millions of dollars to establish an identity and a story for their particular brand of tooth paste and having largely won control of this market in distribution and in brand recognition, were faced with a dilemma and a decision that would puzzle Solomon in all his glory.

They have approached the solution of this problem in probably the only way that is open to the established, entrenched leaders,—that is by incurring the very grave risk of sitting by and perhaps seeing a new competitor soar into leadership, in the hope that this new product would fail to live up to its claim and be more or less a flash-in-the-pan, and by bringing out under a new brand name a dentifrice that would be competitive to this new product, that would in effect confine this new competition within their own family and that would not incur the hazard of dumping overboard everything they had worked to build for many years.

Again in soaps we have seen in the last two years a new function added to soap which won such wide public approval that this product appears to be quickly jumping into the first rank of leadership and threatening in a serious way some of the established brands of soap that have been sold purely for the historic functional use of soap.

An exciting and revolutionary change is undoubtedly taking place in the entire field of cold remedies, one of the basic and volume group of products in the drug trade. That the industry suspects that these new antihistamine tablets will largely sweep out of the way many, many long established brands, that had been used to alleviate the misery of this most general oilment, is obvious from the way in which certain proprietary companies are striving madly to enter this field.

Here is one case in which it might be said that the hazard of success is not so great because it seems perfectly evident to many of the successful proprietary companies in this field that hesitation is far more dangerous than the bold plunge, and that the abandonment to all intents and purposes of the established product is a calculated risk which they must take.

It probably could be said that the hazard of success is most clearly evident, and is often seen in business, when the question of calculated risk has vague and fuzzy outlines and where the leading, successful manufacturer must spend many sleepless nights debating a decision that would be partly judgment and partly desperate guessing.

Is A. & P. on the Up and Up?

There seems to be a general opinion that the A. & P., in striking back so vigorously at the anti-trust suit which has been leveled at them, have for the first time in American business history made the American public understand what it is all about, transferred the cloak of frustration from business to the bureaucrats and sharply placed the anti-trust lawyers on the defensive.

We have used the word anti-trust lawyers because the A. & P. in their advertising have sought to focus the entire responsibility for the government's present conception of monopoly on these rather nebulous creatures rather than on government.

In their extensive and offensive advertising campaign, the A. & P. have made three basic points which have certainly registered with public opinion. These points are that this anti-trust suit, if successful from the government's viewpoint will—

(1) Destroy A. & P.

(2) Increase food costs.
(3) Hurt others.

While business and most people are heartily applauding and agreeing with the premises laid down by the A. & P., it must be confessed that there is also a strong element of special pleading in these advertisements which do not frankly face an issue which we believe must be solved some day.

That issue is a thorough airing and discussion as to whether it is socially, politically and economically sound to permit the continued expansion of the very large retail organizations into the functional area of manufacturing, private label packaging and primary market purchasing.

Large retailing has been expanding its manufacturing activities at an accelerated pace. We have recently heard a great deal of evidence, in tests made in retail stores, proving that the competent retailer can very largely control the sale of packaged, branded, advertised products within his own store and that to a major extent the retailer can divert public preferences from brands that have won an acknowledged position in public acceptance away from these brands to others which the retailer may control or in which he may have some hidden interest. It must be admitted that these brands to which the retailer uses all of his facilities for store visibility, store accessibility and retail salesmanship are equal in quality and very often appear to have a price advantage.

But that still does not answer questions that should be brought before the Forum of Public Opinion, that is the question as to whether these retailers can perform a better economic service than any free manufacturer or distributor with whom they may do business—and even then, whether it is socially desirable to have any retailer secure such a monopolistic position that he may, within any community, control certain essential utilities from the primary market purchase of the raw material, in transportation, fabrication, packaging and wholesale and retail distribution. That is quite a long chain of economic operations for any one cooperation to control even in one locality, in commodities that may be termed essential.

House-To-House

This is undoubtedly a period of sweeping changes in distribution. The new conception of the super-market and self-service selling at low retail cost, the amazing progress which is being made in automatic machine dispensing and the thriving growth of planned suburban shopping centers are some of the dynamic, evolutionary changes that are now taking place in every state to change the cost and the method of distributing consumer goods.

Even more remarkable is the formidable growth of house-to-house selling, that ancient form of selling which goes back in this country to the early colonial Yankee peddler.

This upward surge in house-to-house selling is a phenomenon of the last 10 years. During this period the volume of goods purchased by the housewife at her own doorstep has increased many fold, the number of sales people employed in this way has multiplied by many hundreds of percent and the number of companies engaged in distributing products in this way has shown a large increase.

There are many reasons which could be cited as an explanation for this huge growth in house-to-house selling. Unquestionably one reason is a far better control of the ethics and responsibilities of the people engaged in this kind of business through the efforts of Better Business Bureaus, town and city regulations and similar methods. Another and perhaps more vital reason was the discovery some years ago that the city housewife is as susceptible, and far more accessible to this method of selling than the woman on the farm and in the small village.

Before this last 10 years it was generally accepted by the leading house-to-house sellers, and particularly the famous "wagon companies," that the place for house-to-house selling was in rural districts in competition with the mail-order catalogue and in places where good retail service was not easily available. But it became obvious about this time that the general ownership of the automobile brought nearly every family in America within easy, convenient reach of excellent retail facilities. It looked at this time as if the house-to-house seller would have to find some way of competing on equal terms with a good or alert retailer in a fairly substantial trading center or face a continually declining market.

The spreading of these companies into larger and larger urban communities has provided house-to-house companies with a vertible gold mine that even at this time has been only partially explored. In this previous, untouched urban market where resided over two-thirds of the people and where there is more than two-thirds of the purchasing power, these house-to-house companies have found to their startled amazement that business is easier picking and more economical to secure than in the rural market.

It is easy to understand that a house-to-house salesman can make many more calls a day and contact many more customers on a city street than he could in a rural district. But it was indeed a discovery to find that these householders on a city street were just as susceptible to "at home" selling as are the folks on the farm.

The key to this riddle may lie in an extremely interesting survey made by a Toledo newspaper in the city of Toledo, in its suburbs and in the surrounding rural areas. In this survey it was found that the people in the city of Toledo were making purchases from house-to-house agents and from mail-order catalogues with just about the same frequency as the people in the surrounding country. Since there were many more people in the city of Toledo than in the surrounding areas, this meant that a very substantial volume of Toledo consumer purchases were slipping out of town under the very noses of the retailers.

The reasons these Toledo folks gave for their growing preference for catalogue and house-to-house purchases were equally interesting. Toledo housewives stated that parking congestion was making it increasingly difficult for them to reach retail stores. When they did reach these retail stores they discovered that a number of elements discouraged purchasing. For instance, many people employed an eight hour day were unable to reach the store at any time it was open. Other people complained of the inadequate stock, the poor selection, or the choice of brands in many retail stores. Still others, and there were a very substantial number of these, complained about the indifference of retail clerks and their lack of knowledge of the products they were selling.

An example of the way this urban market has grown for house-to-house sellers is provided by a leading company in this industry, operating with this plan of distribution. Several years ago this company had over 1,000 agents calling regularly on Chicago homes, and by the end of 1950 expects to have 2,000 agents.

An examination of the Consumers' Panels conducted by the 20 or so urban

A BETTER DROPPING PART MAKES A BETTER PRODUCT

#1

#2

#3

#4

To Be SURE Your Liquid Preparation Can Be Properly Dispensed

SPECIFY

New Perfection DROPPING PARTS

Many a fine product has been rejected by the public simply because some seemingly small detail was below standard. The dropping part can be such a detail—an apparently simple device, yet vital to the user's satisfaction.

Since 1931, when Pennsylvania Glass originated the screw-cap dropping part, we have specialized in this important dispensing unit. This advantage in experience and specialization has made NEW PERFECTION Dropping Parts everything their name implies. Longer experience and undivided attention to one product have resulted in superior quality and reliable performance. To be sure of the best—specify NEW PERFECTION Dropping Parts.

We can supply various colors of bulbs in natural rubber or in our special oil-resisting Amekine compound, caps of plastic or metal in many sizes and colors, and various types of dropper glasses in any length with calibration in any color or plain. New Perfection dropping parts will fit your own bottles, or can be supplied in combination with our Modernistic bottles in Amber, Blue, Green or Clear glass. Sizes: 2cc, ⅛, ¼, ½, 1 and 2 oz.

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"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

newspapers operating on the Milwaukee plan shows an amazing growth in the percentage of families purchasing by preference from house-to-house agents. In some cities this percentage will run as high as 8 per cent, but in most cities it varies from 4 per cent to 8 per cent. Even more interesting in cities that keep a 10 year record of consumer preference for the type of retail store, house-to-house selling shows a continual progressive growth as compared to the fluctuation in preference among the department store, the chain and the independent drug store.

In addition, an examination of these Panel Reports together with an examination of numerous magazine consumer surveys indicates a rather startling conclusion. In these surveys the leading house-to-house distributor of cosmetics, that is Avon-Allied, has a substantial, preferred position to any other cosmetic brand. The brand name of this particular cosmetic company is the only one that appears with uniformity under practically every classification of cosmetics. All other famous brands of this industry show up as leaders, or near leaders, in one, two or at the most three products and then disappear from the survey list. But with remarkable consistency the Avon brand will appear in second, third or fourth place across the board.

This cosmetic company is reported to be selling through more than 60,000 exclusive personal representatives, although it would hardly be fair to compare this with any retail distribution in the industry. It would be fair to guess that the number of calls per day that these 60,000 agents will make will probably exceed the number of contacts made with consumers on the basis of any one brand through the retail distribution of that one brand. Or if we look at this in another way, probably the largest number of paid demonstrators, plus retail salesgirls under direct continuous P.M. system will not exceed 2,000 or 3,000 girls, of which not over 600 will be a paid demonstrator. At any rate the annual report of this company showing sales of around $24,000,000 is certainly substantially greater than that of any other cosmetic company in this country and undoubtedly in the world.

Another interesting conclusion that could be drawn is that the house-to-house salesmen over a period of years have succeeded in establishing a higher degree of brand recognition and brand preference by consumers generally than has any one of the four or five cosmetic companies which have been spending in consumer magazine advertising upward toward a million dollars and supported by a retail distribution that will exceed in each case 30,000 stores.

If the steady growth and the acceleration year by year of house-to-house selling continues as it has in the past 10 years, there are a few questions which this trade and a few others will have to face. The question which the manufacturer is having thrust upon him is this:—

Is the demonstrator calling on the home selling more merchandise and establishing a greater degree of brand recognition and approval than is the demonstrator tied to a retail counter?

Another question some retailers must face is this:—

If a retail store is tied to a high cost of operation and is featuring goods that require selling and demonstration, can it afford to continue sitting down in a clustered, congested area waiting and hoping that the customer will seek them out?

Three out of every five wage earners are today definitely conscious of the fact that they are paying taxes on many of the things they buy.

The so-called excise or purchase tax is foremost in the minds of these wage earners and is considered far more unreasonable than federal or state income taxes or general city sales taxes.

In a wage earner's Forum, sponsored by McFadden Publications, the excise taxes on perfumes and cosmetics were considered unreasonable by the largest number of wage earners in this Panel. 24.6 per cent of these people specifically marked these taxes as unreasonable. This is 93 per cent of the people stating that they were aware of a tax on these products.

Department of Commerce Monthly Retail Trade Report

Retail sales of all kinds in drug and department stores showing sales for the month of October 1949 as compared with the same period on 1948.

	Department Stores	*Drug Stores*		*Department Stores*	*Drug Stores*
Atlanta	–19	–7	Minneapolis	0	0
Baltimore	–13	–4	Milwaukee	–14	0
Birmingham	–16	–4	Newark	–9	–5
Boston	–5	–1	New York	–14	–2
Chicago	–13	–2	Philadelphia	–12	0
Cincinnati	–11	–6	Pittsburgh	–25	–1
Cleveland	–14	–6	Providence	–15	–1
Dallas	+3	0	St. Louis	–5	+1
Detroit	*X*	–3	San Francisco	–1	–1
Los Angeles	–8	–9	Seattle	–5	–2

Cosmetic Discrimination Suit

In a suit brought by Sun Cosmetic Shoppe, Inc., New York, against Elizabeth Arden Sales Corporation, also of New York, for triple damages because of discrimination in violation of the Robinson-Patman Act, the District Court granted a motion of the defendant and dismissed the case because the transactions between the two companies were intrastate. However, this decision has been reversed by the Circuit Court of Appeals and the case must now be tried on its merits.

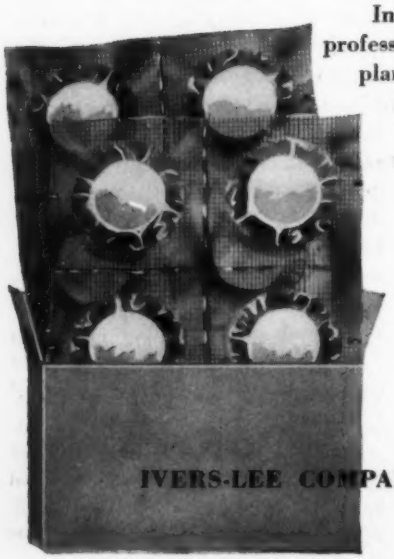
However, the decision of the Circuit Court because it points out and delimits the damages recoverable by the plaintiff. The case involved the fact that the plaintiff was not furnished demonstrator services and other things, and the court said that the plaintiff will have to prove by testimony its specific losses resulting from such discrimination. The court said that the damages cannot be measured by the amount of salary which would have been paid to a demonstrator, but that the maximum verdict would be measured by the salary of the demonstrator. However, the court said that no such sum could be arbitrarily fixed by the court in absence of proof of specific damages. Therefore, it seems that the plaintiff will have to prove loss of specific sales—a most difficult and intangible thing to prove and requiring a very large number of witnesses. The Circuit Court said in its decision: "The only proper proof is the loss to the plaintiff's business and the salary of a demonstrator is not such a loss."

This will be an extremely interesting case to follow as an example of what can be recovered as triple damages under discriminatory action in violation of the Robinson-Patman Act.

IN GOOD HANDS

Inherent in the calm assurance with which you entrust yourself to an ocean voyage, is the knowledge that trained hands are in control—the long years of specialized training, and the competence of proven accomplishment can be relied on without reservation.

In entrusting your product to us for packaging, you enlist the finest, professional packaging talent available — the physical facilities of the finest plant in the country, a trained expert personnel of 450 people, capacity and resources which guarantee dependable, economical packaging — plus the background, ingeniousness and know-how of an organization which for 30 years has specialized exclusively in unit-packaging. Sanitape-Sealtite Packaging — finer packaging at less cost. You find here your answer to the challenge of hard-hitting selling.



Sanitape-Sealtite is a unique method of packaging pills, tablets, capsules, creams and powders, by which each unit or unit dose is sealed in its own airtight compartment surrounded by a crimp flange assuring complete protection and maintained efficacy. Packages, machines and methods covered by U. S. and foreign patents and patents pending. Available only through the Ivers-Lee Packaging Service. Infringing imitators will be subject to legal prosecution.

IVERS-LEE COMPANY, NEWARK, N. J. SANITAPE SEALTITE

New Products and New Packages

ABBOTT LABORATORIES introduces Norisodrine Sulfate (Isopropylarterenol Sulfate, Abbott) for the reduction of bronchospasm in asthma. Norisodrine is similar to epinephrine and ephedrine chemically, but it exhibits some differences in pharmacological activity. Norisodrine is supplied in two powder formulae, 10 per cent and 25 per cent, for oral inhalation, and in solution for use in a hand nebulizer or by oxygen aerosolization.

Lissephen, Abbott's trade name for 3-*ortho*-toloxy-1, 2-propanediol, known in Europe as Myanesin, has been shown to produce marked relaxation of muscles in conditions characterized by spasticity due to lesions in the brain or spinal cord. It is indicated to relieve the spasm which occurs in the acute stage of poliomyelitis and for relief of muscle spasm due to arthritis, bursitis and Parkinson's disease.

Adsorl (Abbott's dispersible vitamin A and D drops) is a concentrated solution of synthetic fat soluble vitamins A and D in a fat dispersing agent, Sorlate.

BRISTOL-MYERS Co. has put on the market a large economy size tube of Ipana, fairtraded at 57 cents. The company's display department has issued easel-backed displays for window and counter use.

DOME CHEMICALS INC. announces that its new treatment for superficial mycoses is now available commercially under the name, Fungi-Treat. This product is packaged in a one ounce bottle containing a brush applicator.

ENDO PRODUCTS INC. announces the release of Acon, a high potency water-soluble vitamin A for oral administration by drop doses. Each cc. of Acon contains 25,000 units of vitamin A.

GUERLAIN, INC. introduces a series of luxury bath oils featuring such familiar and popular odors as Shalimar, L'Heure Bleue, Liu, Mitsouko, Vol de Nuit and Fleur de Feu. Packaged distinctively, these oils are moderately priced.

LEDERLE LABORATORIES has developed a new form of the antibiotic aureomycin called Aureomycin Spersoids Dispersible Powder. Adapted for treating of children, Aureomycin Spersoids is a pleasant tasting, chocolate flavored powder which provides 50 mg. of aureomycin per rounded teaspoonful. It may be mixed with milk, water, other beverages, or food.

S. E. MASSENGILL COMPANY introduces Pasem-Sodium, a preparation of the sodium salt of para-aminosalicylic acid, indicated for the treatment of tuberculosis.

ORGANON, INC. has announced that Oranixon, a muscle relaxant, is now available in a new 500-mg. tablet, for greater convenience of administration in the treatment of neuromuscular disorders. Half the number of new tablets are needed per day for the treatment of Parkinsonism hemiplegia, low back pain, and other neuromuscular disorders. The new 500-mg. Oranixon tablets are available in bottles of 1000 and 100.

CHAS. PFIZER & CO., INC., announces two new vitamin B_{12} products, Parenteral Grade Solid, and an Oral Grade Solid of their Vitamin B_{12} Concentrate. Both products, produced by fermentation processes, will be marketed as stable, dry concentrates.

PITMAN-MOORE CO.'S Hytrona[R] (belladonna alkaloids in an elixir with phenobarbital) for relief in such spasmodic conditions as spastic constipation, spastic colitis, and dismenorrhea, is supplied in pint and gallon bottles. The product is indicated also for prophylaxis and treatment of motion sickness.

KATHLEEN MARY QUINLAN, INC., introduces a new cologne, Golden Fragrance, a light feminine scent appropriate for use day or night, and adapted to any costume. The cologne is smartly packaged in gold, red and black, with an outer covering of gold foil paper.

SHARP & DOHME, INC., announces the national release of Cremotres Triple Sulfonamide Suspension, a pleasantly flavored suspension especially suitable for infants and small children. Danger of renal complications is eliminated or greatly diminished in this product.

SMITH-DORSEY COMPANY presents four new products as additions to its line of pharmaceuticals: Testropinate, an effective androgen for clinical use; PYE Capsules, a combination of pyranisamine and ephedrine; PPA Capsules, containing pyranisamine maleate, phenacetin and aspirin; and Antopic Cream, which contains pyranisamine maleate, calamine, zinc oxide and benzocaine in a water soluble base.

SMITH, KLINE & FRENCH LABORATORIES introduces Theptine, a light and pleasing elixir, which combines the anti-depressant action of Dexedrine Sulfate and the nutritional action of thiamine, niacin and riboflavin.

WINTHROP-STEARNS INC. is now offering Procaine Penicillin G in Oil with 2 per cent Aluminum Monostearate, Fortified with Potassium Penicillin G. Crystalline. Each unit contains 400,000 units of penicillin per cc. and is packaged in vials of 10 cc., sufficient for ten doses.

Two other developments of Winthrop-Stearns are soluble penicillin tablets recommended for oral use, dissolved in milk or fruit juices for treatment of children; and Mucilose with Cascara Granules, a combination forming a mild laxative.

WYETH INCORPORATED announces the release of Penstix-SM, a new local treatment for acute and chronic mastitis in cows and milk goats, developed to combat both penicillin-susceptible and the heretofore resistant infections of the udder. Penstix-SM are small, smooth, tapering, self-lubricated bougies for easy insertion into the infected quarter.

Stock Bottles

that give your package INDIVIDUALIZED DISTINCTION -available in all popular sizes

Add glamor and distinction to your package, without the costly investment of special design, by selecting one of the many artistic Swindell stock bottles . . . The four bottles illustrated are representative of a wide variety available for your choice . . . in sizes ranging from 1/8 ounce to 16 ounces.

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Swindell

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So it's valuable to know of a container outfit with facilities to give you *something special* within commercial limits on cost.

Scovill offers you these things to help you solve problems of cost, sales appeal and merchandising. High-production machinery. A broad selection of containers and caps in plain and highly finished metals. A knack for engineering new container constructions and styles.

So take a good long look at the containers shown here (identified by letters in coupon). They'll give you some idea of what Scovill can do for you. Mail the coupon below, checking the item or items that are in your line, and we'll go to work for you. Send to: Scovill Manufacturing Company, Drug and Cosmetic Container Division, Waterbury Conn.

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A ☐ Bail Band Assembly
B ☐ Snap Jar Cap
C ☐ Serum Clamp
D ☐ Perfume Bottle Holder
E ☐ Special Shape Perfume Bottle Cap
F ☐ Bobby Pin Holders
G ☐ Lotion Dispenser
H ☐ Lotion Pump

My problem is none of the above, but . . . . . .

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Harris Research Laboratories, Washington, D. C.

and James W. PERRY
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This book summarizes the achievements of the last three decades in developing a host of new surface active agents. The different types of products are reviewed with particular attention to their laboratory synthesis, commercial production, and characteristic properties. Special attention has been directed to the numerous practical applications of surface active agents and to their useful effects—foaming, wetting, detergency, emulsification, spreading.

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Vice President and Technical Director
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NEWS...

Society Elects Officers

Dr. Theodore H. Rider, director of the research department, Lever Brothers was elected president of the Society of Cosmetic Chemists at its annual meeting in December. Other officers named include Dr. Everett G. McDonough,

DR. T. RIDER

Evans Chemetics as vice-president; Ruth R. Bien, Good Housekeeping Institute, Secretary; Emery A. Emerson, Wildroot Co., treasurer; Dr. S. D Gershon, Pepsodent division, Lever Brothers, and Dr. Paul G. I. Lauffer; Geo. W. Loft Co., as directors.

Mallinckrodt Advances Keutzer

Walter S. Keutzer, associated with Mallinckrodt Chemical Works since 1909, has been appointed assistant sales manager of the Western Division of the Company with headquarters in St. Louis. Since joining Mallinckrodt, Mr. Keutzer has been closely associated with the wholesale drug, pharmaceutical, and allied divisions. His new duties will involve these divisions as well as the industrial, photographic, and reagent chemicals division.

Appointed by Sharp & Dohme

The appointment of Dr. J. Murray Scott as medical director of Sharp & Dohme, Inc., has been announced by Dr. W. A. Feirer, executive vice president. Dr. J. William Crosson, who formerly held this position, has been named to the newly created post of medical administrator.

Haines Becomes Ciba President

Joseph S. Bates resigned as president of Ciba Pharmaceutical Products, Inc. in December and has been succeeded by T. F. Davies Haines, who was chosen by the board of directors. Dr. Bates will devote his entire time to the Bates Chemical Company of Philadelphia of which he is the founder and president. Mr. Haines, who played an active part as counsel in the early development of Ciba, has been a member of the board of directors since 1946. He has also been active in the direction of the Ciba Companies in the Western Hemisphere.

Becomes Executive Director

Edward C. Reifenstein, Jr., M.D., has been appointed executive director of the medical and research division of Ayerst, McKenna & Harrison Limited, subsidiary of American Home Products Corporation. Prior to this appointment,

C. REIFENSTEIN, JR.

Dr. Reifenstein was a research associate at the Sloan-Kettering Institute where he conducted chemical studies on the cause and treatment of cancer. Along with his new position, he will remain consultant to the Institute.

Hoffman Appointed Distributor

William A. Hoffman, Inc., New York, has been appointed the sole distributor in the United States of T. Noirot & Cie of Nancy, France; Fsco De Pasquale Fu Santi of Messina, Italy; and J. Hinterseber—J. Wurth, Imst. and Fernpass of Vienna, Austria.

Lambert Sales Force Reorganized

E. T. T. Williams, president of the Lambert Company, recently announced a complete sales reorganization within the company, including the consolidation of the Lambert Pharmacal Company and Pro-phy-lac-tic Brush Co., which formerly operated independently. Stanwood A. Morrill, former Lambert vice-president in charge of sales, will become director of marketing and advertising and will be assisted by George H. Hargrave, until recently sales manager of McKesson's Kansas City house.

Frank Camp, formerly vice-president in charge of sales at Pro-phy-lac-tic Brush, takes over as director of sales in the new organization, assisted by A. N. LaBelle, former sales executive at Colgate. Currently the new Lambert sales organization numbers about 75 men, operating in eight territorial divisions. Additional sales personnel, it is believed, will be added in a short time, in accordance with a sales training program which has been set up in St. Louis. Lambert will continue to operate sales offices and show rooms for all Lambert Pharmacal-Pro Brush products in New York, Chicago, and Los Angeles.

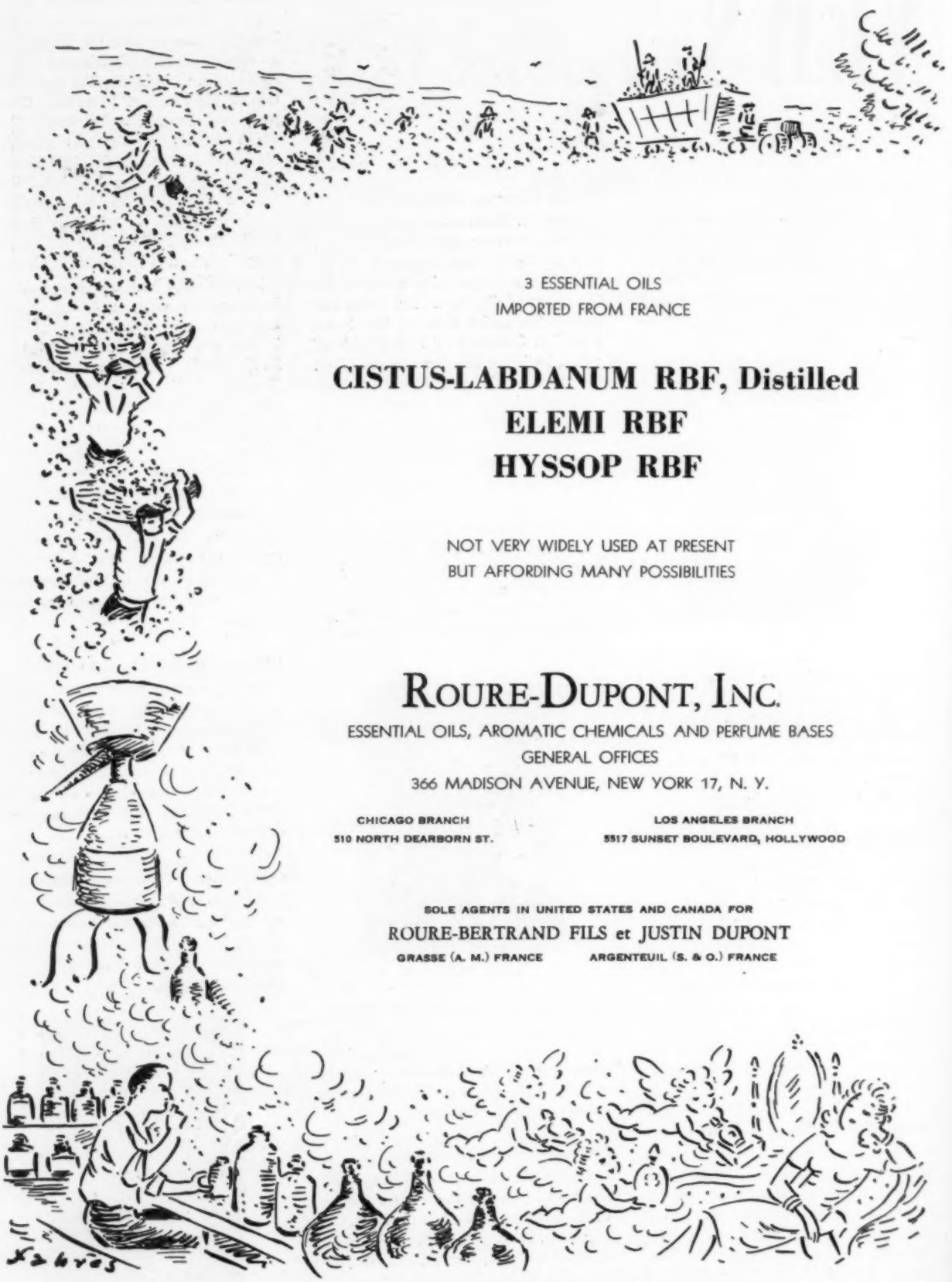
Masters Named Vice-Chairman

Dr. Edward J. Masters was unanimously elected vice-chairman of the scientific section of the Toilet Goods Association, Inc. at its December meeting. Dr. Masters is factory manager of the Helena Rubinstein plant and was formerly manager of the Waterloo Plant of Evans Chemetics, Inc.

Bristol-Myers Appoints Hale

Frank R. Hale has been named director of a recently created merchandising department of Bristol-Myers Company, according to Joseph P. Hardie, vice-president in charge of sales.

FRANK R. HALE



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CIBS Installs New Officers

New officers of the Cosmetic Industry Buyers and Suppliers were installed at the annual CIBS Christmas cocktail party in December at the Hotel Warwick. Paul Alexander, of DRUG & COSMETIC INDUSTRY, and new president, presented a placque donated by the organization to Arthur Mulligan, Lehn & Fink, charter member and president for the past two years. Additional officers include George Schumacher, Chesebrough Mfg. Co., as first vice-president; Lawrence Carter, Ogilvie Sisters, as second vice-president; Robert Williams, Avon Allied Products, corresponding secretary; R. E. Sloan, Lorr Laboratories, recording secretary; and Henry A. Budd, Ungerer & Co., Inc., treasurer. Robert Proom, Wallace Paper Box Co., and William Fairhurst, Tombarel Products, have been named to the board of directors. Over two hundred attended the party.

Paul Alexander (left) of DRUG & COSMETIC INDUSTRY and CIBS president, presenting a placque to Arthur Mulligan (Lehn & Fink), charter member of the organization and president for the past two years. Installation of new officers took place last month at the annual CIBS Christmas cocktail party in the Hotel Warwick.

Named V.P. William R. Warner

Henry R. Herold, sales representative for Richard Hudnut in Oklahoma City for 27 years, has been elected a vice-president of William R. Warner & Company, Inc. and Hudnut Sales Company,

HENRY R. HEROLD

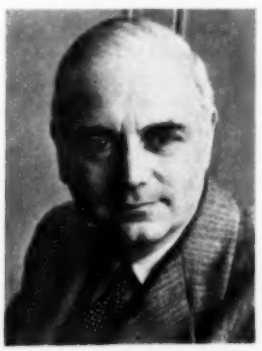
it was made known by Elmer Bobst, president. Mr. Herold will be in charge of the Pacific division of Warner-Hudnut, handling the distribution of products of Richard Hudnut, Du Barry, Chen Yu, Courtley, Standard Laboratories, and others. His headquarters will be in Los Angeles.

Perfektum Issues Brochure

Perfektum Products Co. recently issued a six-page brochure featuring the various types of pharmaceutical equipment manufactured by the firm, used for washing, filling and sealing ampuls, vials, and other containers. Copies of the brochure may be had by writing the company.

SKF Vice-president

Kurt A. Solmssen has been appointed vice-president of Smith, Kline & French International Co. and Smith, Kline & French Inter-American Corp., foreign subsidiaries of SKF Laboratories. Previous to this appointment, Mr. Solmssen has been executive assistant to the president of the Inter-American Company.



KURT A. SOLMSSEN

Thomas Named Chairman

Dr. Charles Allen Thomas, executive vice-president of the Monsanto Chemical Company, and one of the key figures in the atomic energy development, was elected chairman of the board of directors of the American Chemical Society. Having served as president of the Society in 1948, he will assume his new position on January, succeeding Professor Roger Adams, head of the department of chemistry in the University of Illinois.

N. Y. Board of Trade Elections

At a special meeting of its board of directors in December the New York Board of Trade, Inc. elected to office the following representatives from the Drug, Chemical and Allied Trades Section. Harold M. Altshul, Ketchum & Co., Inc., was named vice-president; Robert B. Magnus, Magnus, Mabee & Reynard, Inc., was re-elected assistant treasurer; and E. T. T. Williams, The Lambert Co., and F. Dean Hildebrandt, McKesson & Robbins, Inc., became new directors. Fred H. Stock, Chas. Pfizer & Co., Inc.; Carl M. Anderson, Merck & Co., Inc.; and Harold M. Altshul were re-elected as directors. William T. Van Atten (vice-president, Dun & Bradstreet) was elected president of the organization.

Sandoz Enlarges Field Staff

Sandoz Pharmaceuticals added 35 representatives to its field staff during 1949, according to Dr. Carl Henze and Mart Fossel, general manager and assistant general manager, respectively, who announce the permanent appointments of Harry D. Davis as manager of the professional service division and E. Whitney Agre as assistant to Charles H. Paul in the sales department. Both Mr. Davis and Mr. Agre have been acting in their new capacities during the past year.

Boyd With Oxzyn Co.

Milo C. Boyd, formerly with Kolmar Laboratories, is now associated with the Oxzyn Company in a sales capacity.

Salesmen's Assoc. Nonination

The nominating committee of the Salesmen's Association of the American Chemical Industry, Inc. has submitted the following list of candidates for officers and members of the board of directors. Charles V. Douglas, Heyden Chemical Corp., as president; Paul W. Hiller, Innis, Speiden & Co., vice-president; Edward A. Bush, Bush Aromatics, Inc., as treasurer; and Robert J. Milano, Millmaster Chemical Co., as secretary. Warren F. Schumacher, Denman C. Peniston, and Ralph Ericcson were nominated as members of the board of directors.

Squibb Opens New Branch

E. R. Squibb & Sons recently opened its new $500,000 Los Angeles branch headquarters with ceremonies attended by twenty-five hundred people, including Los Angeles public officials, leading druggists from Southern California and Arizona, and employees of the company and their guests. Studies are already being made according to C. M. Van Kirk, administrative vice-president, to expand the facilities of the packaging and distribution center in 1950 by an additional investment of more than a million dollars. Among the Squibb officials attending the dedication ceremonies were Carleton H. Palmer, chairman of the board; William L. Arscott, field sales manager; and E. R. Van Vliet, vice-president and treasurer.

Thomas I. McGuire is the Los Angeles Sales division manager: Karl Emans is the branch manager, and B. B. Drake, the district manager.

Appointed Medical Director

Dr. Joseph Mignone was recently appointed medical director of the Ernst Bischoff Company, according to H. G. Terwilliger, president.

Alsop Elects Crowley President

Charles E. Crowley was recently elected president of the Alsop Engineering Corporation at a special meeting of the directors. He succeeds the late Samuel Alsop, Sr., and has been associated with the concern for 27 years.

CHARLES E. CROWLEY

Biallo Named Director

Thomas M. Biallo became director of the American affiliate of Camilli, Albert & Laloue, Inc., manufacturers of floral and essential oils, early this month. Following considerable study of the problem of proper sizes for containers, according to Mr. Biallo, the company will maintain large stocks of all types of containers, including small ones for practical research. The telephone number will be PLaza 3-6070.

Officials of E. R. Squibb & Sons attending the formal opening of the new Los Angeles branch headquarters. Left to right are E. R. Van Vliet, vice-president; C. H. Palmer, chairman of the board; T. I. McGuire, Los Angeles sales division manager; W. L. Arscott, field sales manager; B. B. Drake, district manager; and Karl Emans, branch manager.

Celebrates Fiftieth Year

Hugo Pulver, executive vice-president of H. Kohnstamm & Co., Inc., celebrated his fiftieth anniversary with that company in December when 120 employees of the Chicago office and sales organization gathered at the Lake Shore Athletic Club for a surprise testimonial dinner in his honor. Mr. Pulver began working for Kohnstamm in 1899 at $10.00 a week as an errand boy in the shipping room of the Chicago office and during the evening studied chemistry at the Armour Institute of Technology. Shortly after the turn of the century, he was assigned some outside sales territories in Iowa, Nebraska, Colorado, Utah, and Illinois—a trip he would make twice a year. Indicative of the growth of H. Kohnstamm & Co., Inc., this territory which Mr. Pulver pioneered is now serviced by twelve salesmen.

HUGO PULVER

Mr. Pulver was made vice-president of the company in 1923 and manager of the midwestern division, from which position he made the step to the executive vice-presidency and directorship he holds today.

Appointed by Sterling Drug

Dr. E. Westervelt Dennis, formerly associate director, has been appointed director of the biological division of the Sterling-Winthrop Research Institute, a division of Sterling Drug, Inc. He succeeds Dr. Lloyd Miller, who is leaving the institute to become director of Revision of the United States Pharmacopoeia.

Pfizer Appointments

Chas. Pfizer & Co. has announced the appointments of Karl J. Brunings as assistant director of chemical research and development; Frederick J. Pilgrim and Charles I. Jarowski as research supervisors; and Richard L. Wagner as a member of the research staff.

Appointed to Lever Bros.

Dr. Marvin J. Hall has been appointed associate director of research for Lever Brothers Company, according to Dr. T. H. Rider, director of the company's research department. Also made

DR. MARVIN J. HALL

known were the appointments of Dr. Cheves T. Walling as chief supervisor of organic research and Dr. Leonard J. Vinson as chief supervisor of biological research in Lever's basic laboratories

DR. CHEVES T. WALLING

division. Until the completion of the three-million-dollar research center at Edgewater, N. J., the new members of the staff will remain at the present research headquarters in Cambridge, Massachusetts.

New Faberge Plant

A new Faberge plant is being constructed on Queen Elizabeth Highway, Etobicoke, Toronto, according to C. G. Carmichael, president of Baberge Perfumes, Ltd. The plant is expected to be completed about May 15.

Penick Renews Chicago Lease

S. B. Penick & Company has completed the renewal of a long-term lease for its Chicago branch office and plant, which it has occupied for the past ten years.

Named to Schering Med. Staff

The appointment of Dr. Robert W. Burlew to the Schering Medical Service Staff of Schering Corporation has been announced by Francis C. Brown, president.

DR. LEONARD J. VINSON

FDA Medical Director

Dr. Erwin E. Nelson has been appointed medical director of the Food and Drug Administration, according to acting Federal Security Director John L. Thurston. Dr. Nelson, chief of FDA's new-drug section since 1947, succeeds Dr. Robert T. Stormont, who has resigned to become director of the division of therapy and research and secretary of the council of pharmacy and chemistry of the American Medical Association.

Receives Cosmetic Chemists Award

Ralph L. Evans, president of Evans Chemetics, Inc., and Evans Research & Development Corporation, received the second medal award of the Society of Cosmetic Chemists early last month for his contributions to cosmetic science. Raymond E. Reed, president of the organization, made the presentation during the fifth annual meeting of the society, while Foster D. Snell delivered the principal address, speaking on the topic, "Ralph Liggett Evans, Medalist."

Murphy Named President

George H. Murphy has been elected executive vice-president of Personal Products Corp., according to President Paige D. L'Hommedieu. Mr. Murphy, formerly a director and vice-president of the company, will continue his merchandising and advertising responsibilities, and will in the future direct the industrial relations department as well as the research and development division.

Dutchess Named President

Dr. Charles E. Dutchess, medical director of Schenley Laboratories, Inc., was elected president of the Association of Medical Directors at a luncheon meeting at the Advertising Club of New York. Dr. Robert Herwick, medical director of the Whitehall Pharmacal Co., was named vice-president, while Dr. Kenneth W. Thompson, associate medical director of Roche-Organon Inc., was elected secretary.

Dr. Theodore G. Klumpp (right), president of Winthrop-Stearns, Inc., presenting to Edward McCaffrey, manager of the firm's Metropolitan B division, the president's Trophy in recognition of the highest record in vitamin sales for three successive years. The award was made during the Winthrop-Stearns managerial conference held at the Hotel Lexington last month.

The Maya Line

provides character and continuity to an entire line of products

Stable, economical and versatile, the Mayas are invaluable in maintaining a given fragrance throughout a line of related products such as a cream, cologne, powder, rouge, soap, etc.

The Mayas include such favorites as our Maya Fougère 4650 and our Maya Millefleurs 4707, a variety of fine Parisian Bouquets, and a full line of fresh floral odors.

Write us about your products and we will be glad to offer suggestions and further details.

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Heyden To Work in France

Receipts on an investment to manufacture streptomycin in France may be converted into dollars under terms of an industrial guaranty contract signed in December by the Heyden Chemical Corporation and the Export-Import Bank of Washington as agent for the Economic Cooperation Administration. The guaranty is the first to be issued by ECA for an industrial investment in France.

Heyden plans an investment of at least $100,000, half of which will be used for the purchase of equipment and supplies, and $50,000 or more will be in the form of engineering and technical services computed at actual dollar cost. The guaranty is for $175,000, covering a capital investment of $100,000 plus an earnings increment of $75,000.

The investment is in the form of stock in a French company which is building and will operate the new plant according to Heyden processes. The entire project involves total capital requirements equivalent to more than $1,000,000 of which $290,000 represents an ECA allotment on the French program.

Sets Up Consultation Service

Dr. Franklin C. Bing has announced that he will establish this month a consultation service to advise manufacturers in the food and pharmaceutical fields. He plans to aid the manufacturer in the development of new products, the preparation of labels and claims and their presentation to the Food and Drug Administration, in addition to other services.

DR. FRANKLIN C. BING

Returns from Geneva

W. D. Graham, technical director, flavor division of Firmenich & Co., recently returned from a month's study and work in the research laboratories of Firmenich & Cie. in Geneva, Switzerland.

Wesley A. Stanger, Jr., of Riter & Co., and Fred H. Brandi, of Dillon, Read & Co., presenting to George Miller, president of Strong Cobb & Co., Inc., a bound volume of letters from leaders in the drug industry, a radio for his private office, and a complete camera kit. Presentation took place at a dinner last month given at the Cleveland Athletic Club by department heads and "old timers" of Strong Cobb in honor of Mr. Miller's tenth year as head of the organization. The radio was the gift of the New York members of the Strong Cobb Board, including Mr. Brandi, Mr. Stanger, Arthur Gwynee (formerly of Gwynee Bros.), and John M. Fisher, vice-president and treasurer of Standard Brands, Inc. Herbert A. Strate, vice-president of Strong Cobb & Co. was toastmaster.

Neptun in Quinine Post

R. P. Neptun has been elected vice-president in charge of field sales of the New York Quinine & Chemical Works, Inc., according to Francis J. Reid, executive vice-president. Mr. Neptun has served as a member of the board of directors of the American Pharmaceutical Manufacturers' Association, and is active in many other associations within the industry.

R. P. NEPTUN

Join Sharp & Dohme

Dr. William A. Bolhofer has joined the staff of organic chemical research and John A. Fiedler, the staff of products development in the medical research division of Sharp & Dohme, Inc., according to Dr. L. Earle Arnow, director of research.

Seek Control Lamont, Corliss

Arrangements have been made anticipating the purchase of control of Lamont, Corliss & Co., makers of Nestle's Chocolate products and distributors of Pond's creams and toiletries, by the Swiss Nestle group through its Western Hemisphere company, Unilac, Inc. No changes in management are contemplated.

As soon as Pond's Extract Company can set up its own selling organization Lamont, Corliss & Co. will terminate the selling arrangements it has had with Pond's for more than forty years. Lamont will devote its entire time and attention to the business of promoting the sale of Nestle's chocolate products.

Lloyd V. Young, president of the Pond's Extract Company, has indicated that his company will establish its own selling and servicing organization as soon as possible.

Accepts A.D.A. Post

Dr. J. Roy Doty of Chicago has been appointed secretary of the Council on Dental Therapeutics of the American Dental Association, according to Dr. Harold Hillenbrand, A.D.A. secretary. He succeeds Dr. Donald A. Wallace who resigned from that position to become assistant research manager of the Pepsodent Division of Lever Brothers Company. Dr. Doty will continue to serve as director of the A.D.A. Bureau of chemistry, a post he has held since 1948.

Norco Factory Starts Operation

The new factory of the Norco Products Company of Philadelphia, recently put into operation for the manufacture of Ammonium Thioglycolate, combines the best features of batch and continuous methods, and is the result of over two and one half years of close study and research starting with the construction of a pilot plant. The features now embodied in the production unit were tried and proven long before Thio by Norco was offered to the industry.

For example, no metal of any kind is employed in any part of the factory which comes in contact with the chemicals which go into the production of the final product, from the stage of raw materials straight through. This total elimination of metals produces a product which is practically free from contaminants. This is extremely important because these contaminants later develop into troublesome impurities, since, as is now known, metals in the presence of thio-acids act as auto-catalysts in a cumulative way, resulting in a gradual breakdown of the product. Nothing like this can occur in the product of this new plant with the result that cold wave solutions thus formulated will retain their pleasant odor, and more important, the "shelf-life" of the final products is extended far beyond that now attainable when formulating is carried out with ordinary thios.

Another feature of the system of strict control from raw materials to finished product is the electrono-automatic instruments, which continuously record the progress of all stages of the processing. These instruments are entirely automatic and make adjustments finer and even more quickly than an expert, trained chemical operator under normal plant conditions.

Sun Tube's 25th Year

Incorporated in 1924 by Donald M. Smith, Frank J. Lynch and Henry P. Bristol, Sun Tube Corporation, Hillside, New Jersey, observed its silver anniversary on December 13. The company has grown from a modest beginning to become one of the largest producers of extruded collapsible tubes in the world. The corporation's organization includes a Canadian company, Sun Tube Corporation of Canada, Ltd., at Ottawa, and also holds a minority interest in

RAYMOND R. LEONARD

Tubos de Estanos, of Mexico City. Officers of the parent company are Henry P. Bristol, chairman; Raymond R. Leonard, president; R. Smith Schenk, vice-president; Donald L. Sanders, secretary; Edward L. French, treasurer; and Walter H. Kamp, comptroller. Sun Tube is a wholly-owned subsidiary of Bristol-Myers Company.

Named to New Posts

Charles E. Junod has been named general sales and advertising manager for Pacquin, Inc. and also sales manager of Thos. Leeming & Co., Inc., according to J. H. McShane, president of both companies. It was also announced that R. S. Skelton has been named sales manager for Pacquin, Inc.

Kennedy Resigns from Schieffelin

Because of the pressure of other business, J. C. Kennedy, Jr. has resigned as executive vice-president of Schieffelin & Co., but he retains his status as director and as a member of the Executive Committee. Sturgis S. Wilson has been advanced from treasurer of the company to executive vice-president and member of the Executive Committee. Herbert D. Brown, Jr., has been advanced from assistant treasurer to treasurer.

W. J. Schieffelin III, formerly assistant vice-president, has been named vice-president in charge of Laboratory and Research. Richard Storm has been engaged as assistant sales manager for the Wholesale Division. All changes were effective January 1.

Package Machinery Purchases

Package Machinery Company purchased the Tray-Lock and finished edge carton set-up machine and ice cream cartoning line from General Mills last month. The acquisition of this unit which was originally developed by F. D. Palmer and re-engineered by General Mills, bring to Package Machinery the complete Palmer line. The sale was necessary, according to A. D. Hyde, president of General Mills mechanical division, because of the increased demand on management and plant facilities due to expandion of the company's home appliance and contract manufacturing activities.

Establishes New Firm

Samuel Klein has formed a new firm to deal in perfumer's raw materials. The address is 4 Hanover Square, New York. Mr. Klein, who conducts the Aromatics Course at New York University, was formerly in charge of aromatics division, Van Dyk & Co. as well as perfumer for Synfleur Scientific Laboratories.

Officers and employees of Fritzsche Brothers, Inc., attending the annual dinner dance in the Hotel New Yorker in December.

Gair Subsidiary Makes Purchase

Gair Company Canada Limited, Toronto, the Canadian subsidiary of Robert Gair Company, Inc., New York, recently purchased the capital stock (including the buildings and real estate previously under lease) of Premier Paper Box, Ltd., Montreal. In making the announcement, George E. Dyke, company president, stated that this move will expand the folding carton operations of the Canadian subsidiary and will enable it to provide better service in Montreal and in the province of Quebec.

Chaleyer Initiated Chevalier

Philip Chaleyer was initiated at Chevalier of the Confrerie des Chevaliers du Tastevin a short time ago during a dinner at the Hotel St. Regis. Among the association officials present were Roger Garreau, president, and French ambassador to the United Nations, and Jules Bohy, Grand Master. A few of the guests present included Nicolas G. Lely, minister of Greece to the Netherlands; Fred H. Hotchkiss of the French-American Chamber of Commerce of Paris (chairman of the dinner); Richard de Rochemont of *March of Time*; Guy de Berc, president of the French Line and the French Chamber of Commerce; Henri J. Lesieur, president of Air France; and Lucius Beebe, noted explorer.

1950 G. & I. Catalog Published

The new Gane & Ingram 1950 catalog and price list was recently published and is ready for distribution. It contains approximately ninety fine medicinal chemicals and alkaloids. New items appearing for the first time are para aminosalicylic acid (PAS), para aminobenzoic acid (PABA), calcium succinate, and 8-chlor theophylline.

Squibb Appoints Zimmerman

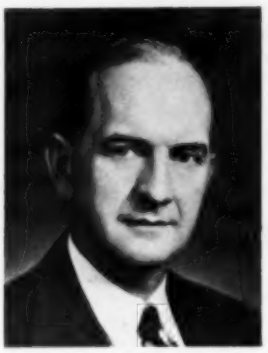
D. R. Zimmerman has been appointed manager of the hospital and institutional sales department of E. R. Squibb & Sons. He will be responsible for coordinating and supervising all of Squibb's sales to public health departments, the Veterans Administration, hospitals and institutions.

Named Director of Research

Richard H. Barry, Ph.D., has been appointed director of research of the Central Pharmacal Company, according to J. L. Rogers, president. Dr. Barry had previously been director of research of Maltbie Chemical Company.

Dr. Wenner Honored Twice

Dr. William F. Wenner, assistant medical director of the Upjohn Company, received two honors last month. Following a meeting of the New York Academy of Science in early December, he was elected as a Fellow of the



WILLIAM F. WENNER, M.D.

Academy, as a result of his outstanding work toward the advancement of science. Dr. Wenner also received an invitation to active membership in the American Trudeau Society, a semi-charitable institution in America for the treatment of tuberculosis.

S.S.S. Promotes Day

Marvin E. Day, former sales and advertising director for the S.S.S. Company, has been named to the position of executive vice-president, according to Warren S. Roberts president.

ADACIOM Elections

Neal M. Draper, St. Louis manager for Solvay Sales division, Allied Chemical & Dye Corporation, was elected president of the Associated Drug and Chemical Industries of Missouri, Inc. at its annual business luncheon meeting at the Hotel Sheraton last month. Elected with Mr. Draper were the following officers: O. W. Rash, vice-president of Lambert Pharmacal Co., as vice-president; P. A. Hein, district sales manager, Mallinckrodt Chemical Works, vice-president; G. C. Irwin, president, Irwin-Willert Company; J. A. Mueller, director technical control, S. Pfeiffer Mfg. Co., as secretary; and J. L. Lanz, consultant and manufacturer's agent, as treasurer. Eight of the nine-man executive committee were re-elected.

Riders Limited Expands

Riders Limited, North Hollywood, California, has expanded to the manufacture of private label pharmaceuticals, cosmetics and specialties, with emphasis on the production of materials for eastern companies. The expanded firm will operate on a 24-hour basis, and will guide its customers in labeling, sales promotion and advertising techniques. The company was founded by W. E. Rider, formerly chief chemist in charge of manufacturing for McKesson & Robbins on the West Coast.

Wesemann Again Heads Essential Oil Assn.

H. P. Wesemann, vice-president of Fritzsche Brothers, was reelected president of the Essential Oil Association of U. S. A. at the annual meeting held January 6, at Hotel Plaza, New York. Gerard J. Danco, president of Gerard J. Danco, Inc., was reelected vice-president of the Association, and George H. McGlynn, vice-president of Magnus, Mabee & Reynard, was reelected secretary-treasurer. Ray C. Schlotterer was reappointed managing director. Ph. Chaleyer, president of Ph. Chaleyer, Inc., was elected to Executive Committee, and F. J. Lueders, president of George Lueders & Co., was reelected to this committee.

Members of the Minneapolis CoMetic Club attending a dinner at the annual meeting in the Radisson Hotel last month. Officers who were elected to office included Clark Cook, Revlon, as president; William Braune, Charles of the Ritz, vice-president; Harry A. Day, Ever Dry Corp., and Charles Lamar, manufacturers representative, as directors; and Tom McMillan, Lactona, Inc., secretary and treasurer.

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***Send for a sample of Flordine today!**

Heyden Announces New Chemicals

Heyden Chemical Corporation has announced four new products which may be of interest as intermediates to the industrial and scientific fields. Benzilic acid and para-benzyl phenol are commercially available, while benzil and benzoin can be obtained in pilot plant quantities. Technical bulletins and samples are available on request.

Plax Corp. Appoints

Northwestern Bottle Company, St. Louis and Container Service Company, Los Angeles, were recently appointed by Plax Corporation division, Hartford Empire Company, to handle distribution of Plaxpak polyethylene bottles. These firms will carry warehouse stocks of the plastics bottles in standard shapes in a complete range of sizes to assure immediate delivery in their areas.

Fritzsche Sales Meeting

Fritzsche Brothers, Inc. held its annual sales meeting from December 6 to 10, attended by representatives from each branch office, as well as executives, department heads, and many of the New York personnel. Informative talks were delivered, designed to point out a program of cooperative and aggressive sales activity. Addresses on the opening day by F. H. Leonhardt, president; John H. Montgomery, vice-president and treasurer; John L. Cassullo, Assistant treasurer; and D. A. Neary, assistant secretary, were followed by a well planned program divided into two phases—one built around the work of the flavor division and the other devoted to the activities of the perfume and technical service division.

Otto Retires from Pfizer

Elmer C. Otto vice-president of Chas. Pfizer & Co., retired from active duty with the company at the close of 1949. Mr. Otto was elected vice-president of the company in 1945, after having

ELMER C. OTTO

served as a director since 1932, and secretary since 1934. His connection with Pfizer dates back to 1912 when he entered the employ of Pfizer at the Chicago office. In 1928 he was named sales manager and moved to the home office of the company, then in New York.

Morgan Reichner Inc. Established

Announcement has been made of the establishment of Morgan Reichner, Inc., consultants in merchandising, sales, sales promotion and advertising. The address is 25 West 43rd Street, New York.

Dr. Hugo Bamberger

Dr. Hugo Bamberger, president of the Chemo-Puro Manufacturing Corporation, died December 30 of a heart ailment at his home in Forest Hills, N. Y. at the age of 62. Born in Lichtenfels, Germany, Dr. Bamberger headed the Chemische Fabrik Lehrte until he was forced to flee in 1938, and subsequently became president of La Synthese in Brussels. In 1941 he entered the United States and established the Chemo-Puro concern.

Thomas C. Davis

Thomas C. Davis, retired department superintendent for Schieffelin & Co., died December 22 in Lutheran hospital, Brooklyn. He was seventy-nine years old.

Charles A. Loring

Charles A. Loring, retired head of Gilman Brothers, Boston wholesale druggists, died December 1, at the age of seventy-seven. Mr. Loring, who was born June 16, 1872, at North Yarmouth, Me., entered the drug business in 1891 in a retail store in Portland, Me., later shifting to a retail store in Hartford, Conn. In 1895 he became a traveling representative for the wholesale drug firm of West & Jenney; in 1898 he went with Lehn & Fink; and in 1892 he went with Powers - Weightman - Rosengarten Co., traveling for this firm from 1902 to 1905, and being manager of the New York office of the firm from 1905 to 1920. He was secretary of the North American Dye Company until he bought into Gilman Brothers. His son, Charles A. Loring, Jr., is treasurer of Gilman Brothers, and another son, E. A. Loring, is vice-president in charge sales for the wholesale organization.

Jason L. Russell

Jason L. Russell, production manager of the Columbus Pharmacal Company for four years, died Died December 21. He had previously served for twenty years with the Jamieson Company, Detroit, and was a former member of the board of directors of the American Pharmaceutical Manufacturers Association. Surviving Mr. Russell are his wife, Mrs. Grace E. Russell; two sons, Robert W. Russell of Allen Park, Michigan, and Paul L. Russell, Springfield, Massachusetts; a brother, Robert, of Schenectady; a sister, Mrs. James Nisbet of Eaton, Ohio; and one grandchild.

Thomas J. Ryan

Thomas J. Ryan, Chicago district office manager of the Armstrong Cork Company's glass and closure division, died at his home during the latter part of November, following a long period of illness. He joined the company in 1920 and served as a salesman from 1921 until he was appointed district manager in 1944.

Members of the staff of Fritzsche Brothers, Inc., and New York representatives, attending the company's annual sales conferences which were held in December at the Hotel New Yorker. Left to Right are Darrell Althausen, in charge of the Clifton Plant; Jim McNamara, Ben F. Zimmer, Norman Jones, Charles Schneider, Frank Pond, Ernest Lawson and Frank Stebbins

Management Forum

By FRANCIS CHILSON
Industrial Consultant

The First Twenty Years

This year completes my twentieth year in business as a consultant, specializing in the drug, cosmetic and allied industries. I hung out my shingle just after the market crash in '29 when all the world was apparently going to the devil. Looking back upon that brash adventure now, I wonder where I got the nerve to give up a well-paid job to sally forth on my own. I had little capital; a wife and a couple of babies to support.

For three years the road was rocky. The only thing that sustained me was the thought that, although the drug and cosmetic industry was served by a considerable number of consulting chemists, there was no consulting engineer, other than myself, who had been reared in and made a specialty of this great industry. This is still the fact. Other engineers do get assignments in the industry of course and seldom are heard from again. This isn't because they always failed *as engineers* but simply because many professionals will not take the risk of specializing in any one industry for the reason that a single major failure can ruin the specialist.

The first three years gave me a lot of experience—a wonderful variety of piddling little jobs—and very little dough. By the end of that time manufacturers recovered their courage and the log-jam broke. In the succeeding years one big job after another came in: Grove Laboratories, Merck, Sharp & Dohme, Norwich Pharmacal Co., Andrew Jergens, Northam Warren, Chattanooga Medicine Co., Burroughs Wellcome & Co., Yardley, Allen B. Wrisley, Ponds, Houbigant . . . . The complete list is a long one and it also includes many firms in Europe, South America and Australia; the list includes moreover a number of big firms not specifically in this industry, which I was obliged to take on because of the recommendation and insistance of clients.

I was given the opportunity of establishing the entire drug and cosmetic industry of Russia before the war but declined it for obvious reasons. The companies I have worked with range all the way from small ones just getting a foothold all the way up to my biggest client, a firm doing an annual volume of one hundred thirty million dollars.

As a result of this experience, I repeat what I have often said in this column: size and efficiency are not synonymous. I prefer to work with medium size firms. They are more efficient and more friendly. They are more receptive to new ideas and will act on them promptly.

To every client I have had I wish to express my gratitude, not only for the confidence reposed in me but for the opportunities provided to establish so many fine, permanent friendships. It would be inappropriate to close this reminiscent piece without acknowledging my debt to Frazer Sinclair and Tom Farrell, owners of this publication, without whose encouragement and support in the early years the establishment of my business would have been impossible.

Pensions

Ever since pension plans came to the fore during the excess profits days, I have made several attacks upon the way such plans usually are set up and also upon the coverage they provide. Some of my friends, who are nearing the time when they can claim pensions have privately given me hell in no uncertain and highly personal terms even though financially they don't need pensions at all. They are afraid that if I keep hollering loud enough their managements may come to see the absurdity of most pension schemes and cancel them. The things I said about pensions are rapidly being realized and now are being at last given newspaper notice as, witness, a recent editorial in the New York World Telegram, which was inspired by an interview with Bernard Baruch.

The World Telegram points out what I have said repeatedly that pension plans, particularly for executives, tends to petrify and stultify management. Industry is losing the levening effect it once had when mature men felt no hesitation about changing jobs. Such men hang on now, especially when they have only ten or fifteen years to go to reach retirement age. They hang on even when they feel disgruntled, frustrated or dissatisfied with top management policies. No man in my opinion can give the best that's in him when he is secretely dissatisfied or antagonistic. He merely coasts, doing only enough to avoid being fired.

Management on the other hand is becoming too cocksure about its key people. It is coming to feel that regardless of what it may do key people can be relied upon to go along simply because so many of them have pensions at stake. That top management is best which is always a little afraid of its key people. When top management realizes that its key people will not be bullied, brow-beaten, or short-changed, you have a healthy management group; you have industrial democracy. When, however, top management feels that the poor slobs down the line will go along without consultation on any course of action it proposes, the condition is not good for management itself, and in the end is not good for buisness as a whole. That's how management used to feel about labor and the result of such thinking is everywhere evident.

Pension plans are bad for management in another way because, out of sentiment, officials will hesitate to fire an executive, who really should be fired, simply because he has only a few years to go before automatic retirement. I have known many instances of this condition; it definitely is not good for business and in some cases can be very risky.

To clarify my position however, I wish to say now that I always believed in pensions for hourly people and low salaried groups. For people earning up to $5,000 a year I have no quarrel with pension plans except that I do not believe in the fixed age limit. I still insist that many men are young mentally at sixty five while others are mentally old at twenty-five.

With a population that is rapidly growing older and healthier through better nutrition and medical care, people who pass sixty years of age are less likely in the future to be badgered with the infirmities of old age and are more likely to be mentally keen as a result of good health and long experience. Hence, I think we must revise our traditional concept of the number of years it takes to make a person "old." I think it is the duty of industry to provide pensions for all low income classes to be drawn upon when the pensioners feel they can no longer stand the pace. Baruch points out another aspect to this problem in that the fixed pension plans we once thought adequate are now no longer adequate because of rising living costs.

I still feel that any man who receives $5,000 a year or its equivalent should provide for his own future. Men in this class generally have the education and training to go farther if they wish. Management could, with respect to executives and officers, set up a reserve to provide for men who have made outstanding contributions to the company but who, because of misfortunes of one kind or other, are unable to carry on their responsibilities. Many companies actually do this in addition to pensions plans. I know many cases where men are being supported by their companies though they have been unable to work for many years.

I would have no objection to what might be called a selective pension plan for executives, which would provide income for those, who through no fault of their own, became physically or mentally disabled and who have no income other than that derived from their jobs. Such a plan would not be automatic but would be as applicable to a thirty year old man as readily as to one who is sixty.

Too much security is an opiate which dulls the sense of alertness which is the essence of risk. Without risk there can be no progress. Without progress there ultimately will be no security.

The Bankers

Someone has defined a banker as a person who always is willing to lend you money when you don't really need it. My definition is that a banker is a person who knows everything about money and nothing about business. They think of money apart from men. Any business with a good balance sheet and lousy management can easily get credit; any business with a lousy balance sheet and excellent management will find it difficult to get a dime.

Few bankers seem to realize that apart from the cash, securities and receivables on a balance sheet, the other assets are worth only about a dime to the dollar or less. It is management that gives real value to the inventory and other capital assets listed on any balance sheet. Even though auditors can locate and check the book value of inventory and plant assets, such assets are in reality *identifiable*, as the late Mr. Musica showed in the McKesson & Robbins debacle, only by experts within specific industries.

Seldom do bankers make a careful appraisal of management; when they do it is done only in a very casual fashion. I know of one case where a bank's representative made a report on the management of a prospective borrower after a visit of less than a half hour!

It seems to me that banker's thinking and vision are limited by the ever dominating consciousness that they are not lending their own money. Possibly this is one of the effects of the restrictive New Deal legislation, which no one can deny is on the whole a very good thing. Banks had to separate commercial and investment banking. Investment bankers again separate their functions into two divisions: one dealing with secured investments and the other with "venture" investments. Some of the houses have a department known ostentatiously as the "Venture Capital Department." Take it from me the same old rules apply. The capital obtainable from such departments is about as venturesome as a mouse in a hole being watched by a tom cat. They'll give you all the money you want if you don't really need it.

Twice in the past three years I participated in the financing of a couple of gilt edge companies. I have excellent financial connections and had been told repeatedly that whenever I ran across some really good investment opportunities I could get all the money I wished. Both of the stated companies were clients. One company had excellent prospects, a good history, good management, a good plant but a bad inventory and working capital position. Less than a million was needed. The management rightly thought the time

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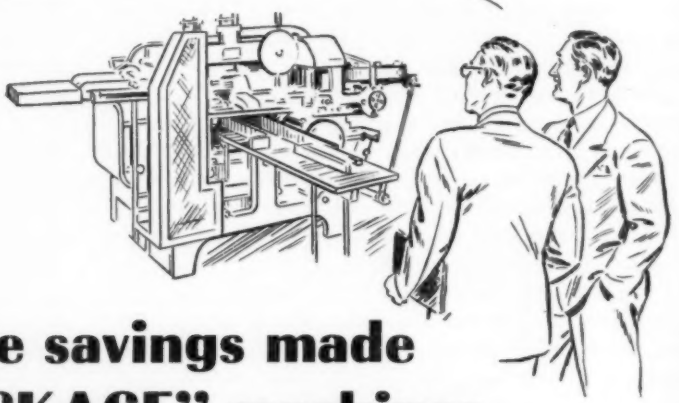

...an example of the savings made by modern "PACKAGE" machines

The statement quoted above was made by a manufacturer who had recently installed one of our wrapping machines. In his case, the machine eliminated many hand operations, making a striking saving in labor costs. It also resulted in a considerable saving of packaging material.

Many executives are not fully aware of the economies that modernization of their packaging departments would make possible . . . A survey of their present equipment and a comparison with the performance of new machines is to them a real eye-opener!

Consider, for example, the savings and added production flexibility offered by a new wrapping machine operating at 100 packages a minute as against an old model doing only 60. You'll undoubtedly find, too, that the new machine consumes less wrapping material . . . That a saving is made on damaged cartons, due to its use of automatic overload releases. Change-over time for different sizes has also been shortened—some models, for instance, require only a few hand-wheel adjustments . . . The insertion of a new roll of wrapping material has been simplified. Valuable man-hours are saved every day.

So we suggest that if you are seeking new savings, look into your packaging methods. Better still, do it with the assistance of a "PACKAGE" representative. You'll find him well informed on all phases of packaging and in the factors that make a packaging dollar go further.

Write for our leaflet "Packages that Sell"

PACKAGE MACHINERY COMPANY

SPRINGFIELD, MASSACHUSETTS

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inopportune to try to recapitalize so we sought to raise the money as a long time loan. We didn't get it. We were told that if we raised a half million of additional risk capital by selling stock the bank would lend us the other half million. If we thought we could have raised the half millon on anything like favorable terms we could have, by tightening our belts, got along without the other half. We did tighten our belts anyway. For a couple of years we had to sweat blood. We literally lifted ourselves by our boot straps. Now that everything is rosy once again the management feels that all bankers can go to hell. Maybe the tears, blood and sweat were good for the company but I don't think so. Had the bankers seen the opportunity, the company would have been very much farther ahead than it is today. Now the management is so sour on bankers that they will not use even short time credit and insist upon a "pay-as-you-go" policy. With the tax picture as it is such a policy sometimes places severe limitations upon the normal growth of a business.

The second attempt concerned a big foreign company which has plenty of money and a marvelous history. But because of exchange restrictions its money cannot be exported to this country. The company has the products, the prestige and the management capacity to make a huge success in this country. Anyone knowing the business they are in would feel as I do their success would be inevitable if they could get enough money to get started. I found as their representative that I could get the money but not on anything like remotely reasonable terms.

Yet it has been repeatedly demonstrated that glib talking Ponzis with good social connections and a lot of paper or even phony assets can get all the credit they want. The financing of the Tucker automobile is a case in point and I know of a similar though much smaller case in the cosmetic industry.

Much can be said for as well as against the old buccaneers like the elder J. P. Morgan. They did more good than harm in their time and I doubt if any fair minded person will deny that American business would be what it is today if it weren't for some of the very long chances they took. The Reconstruction Finance Corporation now takes some chances that no bankers would—or even could take under existing laws. But to me it is utterly repugnant that anybody in a democratic society should have to go to a government bureau for the financial assistance that he should be able to get from his bank.

Money is only one of the commodities with which business is conducted. It should not be so difficult for honest, dilligent business men to get enough to sustain their enterprises. Bankers should somehow regain some of the enterprising spirit they once had.

Incentives

A short time ago I called to your attention a new method of establishing rates of pay which does away with the stop watching, the motion picture cameras, the bump reading and the hoorah evangelism of the efficiency engineers. Rapidly we are approaching a time when it will be possible to set fair rates of pay and to provide fair additional incentives. Now I call your attention to the January issue of Fortune which describes in detail the Scanlon plan for incentive payments as applied in the plant of the La Point Machine Co.

The Scanlon plan is so simple that you should have thought of it yourself. The plan is based on the ratio of normal labor cost to total production value. In the case cited by Fortune, production value is equal to monthly sales (at cost) plus or minus the change in inventory. Fortune gives an example based on the norm of the machine tool industry which is 38 per cent. In this case if shipments for a given month were $70,000 and inventory change was plus $30,000 production value would be $100,000. Applying the trade norm of 38 per cent, the payroll would be $38,000. If however the actual payroll were only $35,000 labor would get *all the savings*, a bonus of $3,000. Management's cut would come from overhead savings, which in many cases is larger than labor savings. To provide for months when sales fall off half the earned monthly bonus is withheld until the end of the years at which time the net difference is paid to the workers.

Obviously the success of such a plan requires the careful establishment of the basic norms and this requires the utmost collaboration between management and labor. Fortune states that "Real participation consists in finding a means by which to reward labor for any increase in productivity, and then in building around this formula a working relationship between management and labor that enables them to become a team. Once this is done it is found that labor's prime interest, just like that of management becomes productivity."

Don't miss reading that article—study it. Here's a case where labor and management are working in harmony toward a common goal—substantial profits and are realizing it.

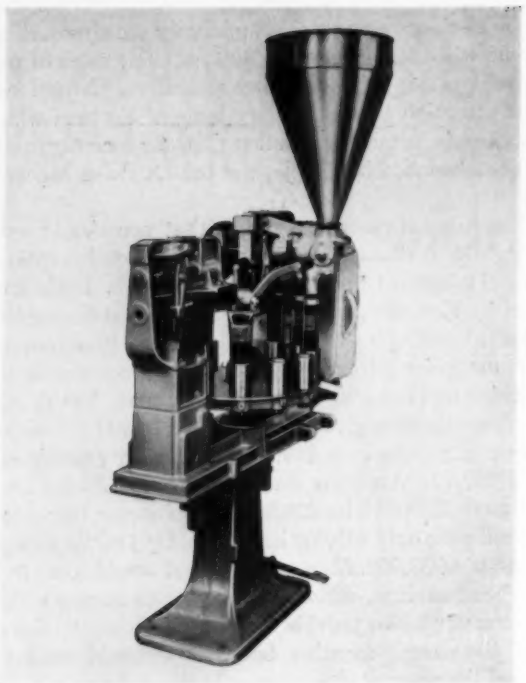
The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Stokes "Giant" Tube Filling Equipment

The F. J. Stokes Machine Co., Philadelphia, Pa., announce a completely new fully-automatic filling, closing and sealing machine for "giant" size tubes.

Designed to handle liquid materials only, such as belt dressings, melted lubricants, etc., the Stokes model 79 Filler has a production rate of 15 to 30 tubes per minute, with only one operator necessary.

Tubes from 2" diameter by 10" long are filled accurately, closed with two neat, tight folds, and sealed with any of several types of closures. The double-fold DiamonLock Clipless Closure, or the double-fold Westite Hermetic Closure when the machine is equipped with heated jaws and control, can be provided. Double-fold



clip closures are also available, but two operators are required—one for tube filling, and the other to place clips in position.

The filling mechanism of the Stokes Model 79 machine is of special bronze, with hopper or stainless steel. Automatic ejector of tubes and conveyor belt can be furnished, together with preforming device to prevent possible mutilation of tubes.

Detailed data covering the new Stokes large-size tube filling, closing and sealing machine will be furnished by the F. J. Stokes Machine Company, 5900 Tabor Road, Philadelphia 20, Pa.

Hispeed Centrifuge

Recognition as one of the year's ten outstanding examples of product design has been given to the 40,000-rpm Model refrigerated vacuum centrifuge of Specialized Instruments Corporation, Belmont, Calif., by Electrical Manufacturing magazine. The award was presented as a feature of the publication's Eleventh Annual Design Competition. Credit for the prize-winning development goes to Dr. E. G. Pickels, director of research, and P. F. Scofield, chief engineer of the company. A detailed description of the unit will appear in a forthcoming issue of the magazine.

Competition in this event, outstanding among product-design engineers, is limited to new equipment reaching the production phase during the current year. This preparative centrifuge, a companion unit to the widely-known Spinco Ultra-centrifuge, has just been introduced to the scientific and laboratory field. It was to complement the more elaborate combination analytical and preparative Ultracentrifuge by providing facilities for handling larger quantities of material on a faster treatment cycle and with automatic features which minimize the need for supervision.

Grinding and Dust Collecting

A new 50 page book has just been issued by Pulverizing Machinery Company of 141 Chatham Road, Summit, New Jersey, manufacturers of pulverizing and dust collecting equipment.

The MIKROS displayed on its pages visualize as completely as possible the complete line of equipment and their wide use and applications in the production and handling of fine and ultra-fine powders of a great variety of materials, including chemicals, pharmaceuticals, colors, dyestuffs, pigments, cosmetics, soaps, resins, food products, sugar, plastics, ceramics, insecticides, fungicides, fertilizers, limes, minerals and metals.

Each machine represents an important unit in the MIKRO Plan for Processing Efficiency thru which the MIKRO laboratory facilities are employed to enable users to turn out "a better product in greater volume at lower cost."

Included in the new book is found a complete description of the various types of Mikro-Pulverizers for precise particle control on a wide range of applications. A three-page list of materials to which the equipment is applicable supplements this section of the book.

Another part of the book is devoted to the Mikro-Atomizer, which is designed for ultra-fine grinds in the lower micron ranges. The Mikro-Collector, for the separation of solids from dust-laden air, is also pictured and described in some detail, with balance of story to follow in a special supplement to be issued later.

Seal-Crimp

George Miller, President of Strong Cobb & Co., Inc., has announced the installation of a new tablet packaging department.

The new department is equipped with "Seal Crimp" machines, which package tablets individually in air-tight, moisture-resistant compartments. Mr. Miller

stated that now private formula customers of Strong Cobb can have their tablets manufactured and seal-crimped in cellophane, silver foil, gold foil, etc.—in one plant.

Economic advantages of the new packaging depart-

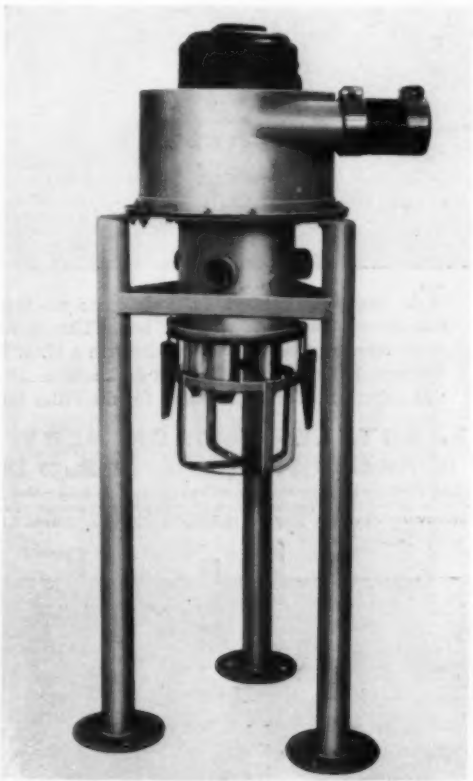
ment, he stated, are the elimination of heavy protective containers, eliminating the step of shipping bulk tablets to a packaging plant, and increased yield in that spoilage in packaging is reduced.

Mr. Miller emphasized the fact that the new tablet seal-crimping machines now give private formula customers laboratory control from raw materials to the delivered trade package. He also stated that during the past twelve months, Strong Cobb produced 1,413,000,000 plain compressed and coated tablets.

Stokes Dust Collector

The F. J. Stokes Machine Company, Philadelphia, Pa., announce the new Stokes Dust Collector for use with tabletting machines, regardless of type and manufacture.

The Stokes Dust Collector supersedes the old filter types with their fire hazards, untidy servicing, and progressive loss of efficiency between filter changes. It also



replaces the blower type with its contaminative external exhaust and waste of heat and fuel.

Designed primarily for use with pharmaceutical tabletting equipment, the Stokes Dust Collector is also easily adapted for collecting such dust products as metal powders, plastic molding compound resins, and other industrial products.

Salient features of the new Stokes Dust Collector include: (1) continuous full capacity; (2) easy cleaning; (3) minimum wear; (4) quick dust disposal; (5) simple installation and maintenance; and (6) complete material salvage.

The Stokes Dust Collector is available in 90 CFM and 150 CFM capacities.

Descriptive bulletin, including specifications, will be sent on request to the F. J. Stokes Machine Company, 5900 Tabor Road, Philadelphia 20, Pa.

Swenson Research Spray Dryer

A small spray drying unit which may be used in either research or production is now being produced by the Swenson Evaporator Company, division of Whiting Corporation, Harvey, Illinois.

This new equipment has proved practical and economical in laboratories, pilot plants and production operations requiring the drying of small quantities of materials. Its capacity varies from 5 to 25 pounds per hour depending upon the type of material and operating conditions.

This new Swenson dryer, less than 9 feet high and 7 feet long is a complete package within itself. Drying chamber, air heater, instrument panel, etc. are self-contained. All interior surfaces which might come in contact with the product are stainless steel and designed to be easily cleaned. The exterior, except for the black instrument panel, is white enamel.

Water Sterilizer

An ultra violet water sterilizer is being sold by Perl-Oussani Machine Mfg. Co., 68 Jay Street, Brooklyn 1, N. Y. This unit known as the Elenite Water Sterilizer has been used by the Army, a variety of soft drink manufacturers and at least one penicillin manufacturer. The unit consists of a battery of ultra violet lamps contained within a stainless steel tank and disposed in such a way that water is made to flow directly over them. Capacities range from 100 to 6000 gallons per hour and the delivered water, regardless of contamination when fed in, is said to range from 100 per cent in the majority of cases to 99.7 per cent in a few free from live bacteria.

Arthur Colton Redesigns

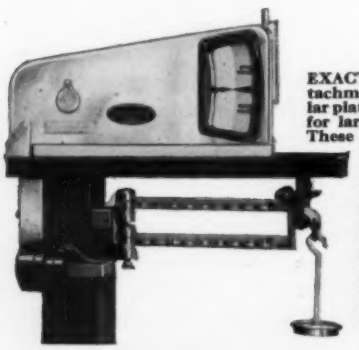
Under the new management changes are rapidly taking place in the design of Colton equipment. At the recent Chemical Show in New York one of the company's executives described the tremendous improvements made in rotary tablet presses and in coating pan construction. I won't attempt to detail these changes here; it is better that you get the complete story direct from Arthur Colton Co., Detroit 7, Michigan.

Conveyor Switch

The Lakso Company, Fitchburg, Mass. offer a conveyor switching unit which can be put into a bottling line and used to separate a single line of bottles into two, or, it can be used also to assemble two lines of bottles into one. It has been used also to take the output of two slow machines and assemble them into one to feed a high speed machine.

Modern Checkweighing Scales deliver Solid Savings . . .

The primary function of a checkweighing operation is accurate weights for each and every package . . . protection against overweight which affects profitable operation and underweight which affects customer satisfaction. Checkweighing costs are dependent upon sound floor planning, easy working conditions for personnel, and equipment that fits the operation. The heart of an efficient checkweighing department is scales, the right kind. Nothing will fog production line efficiency quicker than inadequate weighing units. Speed, accuracy and flexibility are imperative. These are the features built into EXACT WEIGHT Scales . . . the features that deliver those solid savings in product, labor costs and time. Write for full details.



EXACT WEIGHT Indicating Attachment Model No. 4016 for regular platform scales. Ideal equipment for large compounding operations. These attachments substitute visible weight control for guesswork beam balancing, save in overweight, eliminate underweight, materially speed up your work. Actually this simple devise transforms an ordinary scale into a precision model at low cost. Users report savings in time and product from two to ten times the cost of the attachment. Fits any heavy duty scale regardless of capacity.

EXACT WEIGHT SCALES

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The best Filling Machine made costs you less than the cheapest machine you can buy. That is why all these famous products are handled on a U. S. Rotary Vacuum Filler. You will want to know more about this superb machine. Write us for the Filler Bulletin.

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Can General Electric Germicidal Tubes
Help Protect Your Product's Purity, too?

Every tin of ZEMO OINTMENT is irradiated with ultraviolet energy before it is capped in the plant of the E. W. Rose Co., in Cleveland.

FACTS YOU SHOULD KNOW

General Electric Germicidal Tubes produce ultraviolet energy. They are used for air disinfection.

G-E Germicidal Tubes kill 95% or more of the germs in the air through which the energy passes.

Because germicidal energy may irritate human eyes and skin, G-E Germicidal Tubes must be used in properly designed and correctly installed fixtures.

General Electric Germicidal Tubes are available in four sizes, 4, 8, 15 and 30 watts.

Ultraviolet energy of G-E Germicidal Tubes offers a new and additional protection against contamination caused by airborne bacteria and mold.

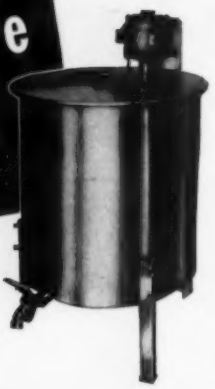
Processing and storing of many foods, pharmaceuticals and beverages is being done more safely in air disinfected by these remarkable germ-killing tubes.

If spoilage is cutting into your profits, General Electric Germicidal Tubes may help you solve your problem.

For detailed information write for FREE booklet, "Air Sanitation with G-E Germicidal Tubes." Address General Electric, Dept. DCI-166-1, Nela Park, Cleveland 12, Ohio.

GENERAL ELECTRIC

Now it's here
A COMPLETE SELF-CONTAINED MIXING UNIT



NOW it's easier—faster to load and operate.
FOR LOW-COST MIXING

You can save time and labor in your mixing and blending operations with an Alsop Stainless Steel Mixing Tank. The specially designed sloping bottom and side outlet insures complete and fast draining. The shorter legs makes the whole Tank low for easier loading and operating yet allows unrestricted clearance between tank bottom and floor. You can be sure of dependable, efficient mixing with minimum cleaning time and operating costs. Available in a complete range of sizes and capacities.

Our new catalogue completely describes our Mixing and Storage Tanks, Filters and Agitators. Write for your free copy. The Alsop Engineering Corporation, 401 Cass Street, Milldale, Conn.

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LABEL PASTERS

No matter what type, shape or size of container . . . it can be labeled faster with POTDEVIN motor driven labelers. Short runs at short notice—special packages for special occasions—experimental jobs, all go through as smoothly as your regular labeling operation. All size and shape labels are machine glued quickly and cleanly. POTDEVIN'S patented glue regulator applies the exact amount of glue without any excess whatsoever. Complete catalog on request.

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Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling.

Twin Air Cleaners for Bottles - Jars Containers

Two bottles automatically cleaned at one time. Sturdy, lifetime, Air Compressor with BUILT-IN AIR SUPPLY TANK, assures a continuous reservoir of regulated filtered compressed air.

Built with precision workmanship for outstanding production performance that has distinguished them for over a quarter of a century.

INQUIRE ABOUT OUR:
Gravity Bottle and Can Filling Machines
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ERTEL PORTABLE *Small Capacity* FILTER

equipped with a three gallons per minute pump.

★ Ertel Model EBW Filter, illustrated, is ideal for small capacity requirements. It will accommodate from two to six Ertel Asbestos Filter Disks which are sealed by a single handwheel which insures alignment.

The same Ertel rigid standards of quality are incorporated in this EBW Model Filter as those associated with the full Ertel Liquid Handling Equipment line.

If you have a problem in filtration write the Ertel Engineering Department. Catalog No. 13 describes Ertel equipment in detail; write for a copy today.

ERTEL FREE LABORATORY SERVICE: Send a sample of your product to us for laboratory test. We will filter it and return for your inspection along with enough recognized Ertel Asbestos Filter Sheets to prove the superior results in your plant.

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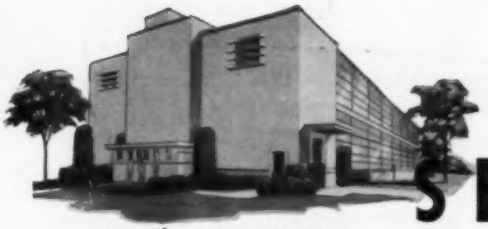
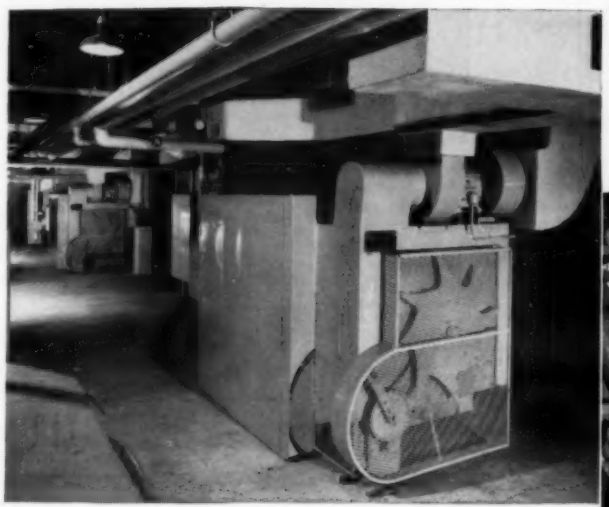


Chemical Manufacturing Building

SEARLE CELEBRATES 60th BIRTHDAY AND BECOMES INDEPENDENT OF "CHICAGO WEATHER"



These 3 air-drying Lectrodryers, located above the areas served, make operations independent of outside weather conditions.

Coating Room: Held at a constant low humidity by a 6,000 cfm. Lectrodryer.

Established in 1888 to produce pharmaceuticals of highest purity and accuracy, G. D. Searle & Company often had to make concessions to Chicago weather to maintain those standards. Production was slowed down and even halted on humid days until conditions were again favorable.

1949 saw them established in their ultramodern plant and independent of outside weather. The Granulating, Compressing and Coating Departments are held at constant low humidities by the three Lectrodryers shown above.

Whether your problem is too much moisture in the air, in gases or organic liquids, there's a Lectrodryer to solve it. Our engineers will advise on the equipment you need and help plan the installation. Bulletin 216 shows how other companies are doing such DRYing. For a copy and for engineering help, write Pittsburgh Lectrodryer Corporation, 309 32nd Street, Pittsburgh 30, Pennsylvania.

In England: Birlec, Limited, Tyburn Road, Erdington, Birmingham.
In Australia: Birlec, Limited, 51 Parramatta Road, Glebe, Sidney.

LECTRODRYERS DRY WITH ACTIVATED ALUMINAS

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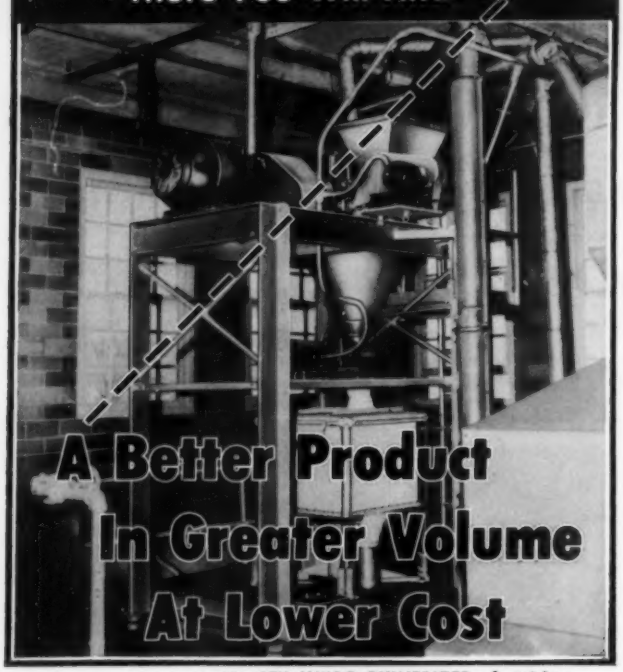
There You Will Find---



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No. 3TH MIKRO-PULVERIZER of stainless steel producing powdered pharmaceutical lactose at rate of 2,000 lbs./hr. at 30 h.p.

Let us show you how others have effected economies and improved their finished product through the use of MIKRO grinding and dust collecting equipment specially designed for the Drug and Cosmetic Industry.

THE MIKRO PLAN FOR PROCESSING EFFICIENCY

If you have a pulverizing or dust control problem, our engineers will study it, telling you what our equipment and the MIKRO-Plan can do for you. There is no charge for this service which is based upon thousands of tests and performance records.

MIKRO-PULVERIZERS—in six sizes
MIKRO-ATOMIZERS—in three sizes
MIKRO-COLLECTORS—in single or multiple-bag units.

WRITE TODAY—for our new, illustrated catalog and information regarding our uncharged-for laboratory service to help you solve your pulverizing and dust collection problems.

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MIKRO-PULVERIZER ZINC ULTRA-FINE -ATOMIZER
Reg. U. S. Pat. Off.
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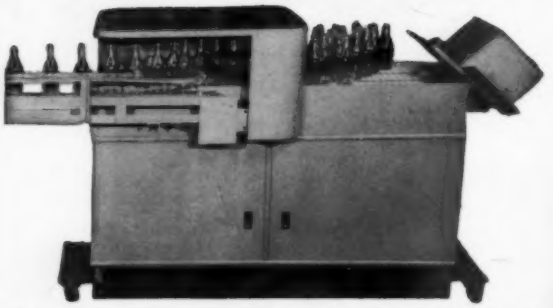
PRESERVE OUR HERITAGE: FAITH, FREEDOM AND INCENTIVE

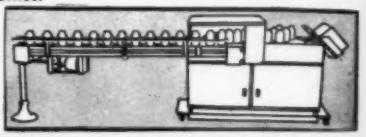
"from a vial to a jug . . . on one machine" Styl-O-Matic

UNSCRAMBLING TABLE



Designed for maximum flexibility and speeds without breakage. Adjustable for practically any size container in any shape. Elimination of handling bottles insures absolute sanitation. Speeds-up any production program with greater savings in labor. Occupies little floor space. Also available with a *"Flask"* attachment for handling flask and odd shaped bottles.

Sketch shows carton upended on tilting table and bottles discharged in single file onto Styl-O-Matic Bottle Conveyor.
Write to Dept. D.C. for complete descriptive literature and prices.



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PROTECT AND Profit with Brown Packets

Protect your dry, free-flowing products by Brown packeting — and profit from the current consumer buying habit of small quantity purchases. Brown Packets are ideal for packaging small, ounce quantities of your product. They're made to your exact specifications, with your design and trade-mark carefully reproduced. Displayed on counters, cards and shelves Brown Packets will speak sales volumes for your product.

IT'S NEW! IT'S HOT!

Brown Bag Filling Machine Company has developed a new heat-sealed packet and an attachment for Brown Bag Filling Machines which will heat-seal the final closure. Write us for details.

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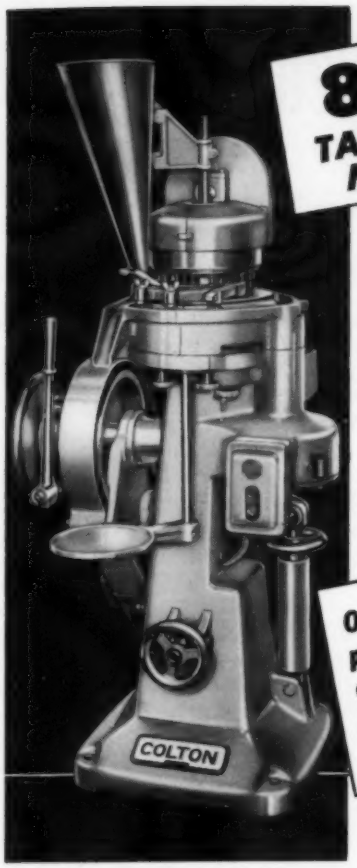
BAG FILLING MACHINE CO., INC. Fitchburg, Mass.
West Coast Reps., Peter D. Bowley & Assoc., 210 Mississippi St., San Francisco, Calif.



800 TABLETS A MINUTE

with

NEW COLTON 16-PUNCH ROTARY PRESS

New Colton No. 216 Rotary Tablet Press is built for fast, economical production of all kinds of tablets up to 5/8" diameter and 11/16" cell. Shaved, heat-treated gears, running in sealed oil bath, give permanent precision and long life—an exclusive Colton construction. Variable speed for different materials. Micrometer cell adjustment. All adjustments easily made.

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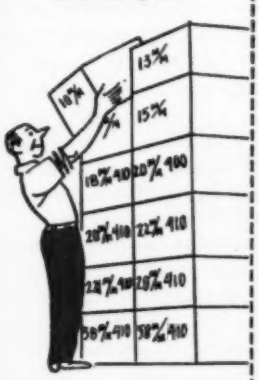
MOLDED CLOSURES *by Terkelsen*

STOCK



Stock sizes 10 m/m to 58 m/m in phenolics or striking urea colors

CUSTOM

We specialize in private mold designs

***Terkelsen* MACHINE COMPANY**

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347 Fifth Ave., New York 15

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Try them once—You'll buy them always!

STAINLESS STEEL and MONEL UTENSILS *by* **METALSMITHS**

- **Designed right**
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You'll find METALSMITHS a reliable, economical source of high quality, corrosion-resistant utensils. Each item is expertly and durably fabricated. Full range of sizes on all items in stock for prompt shipment.

Send for NEW Catalog-Price List showing complete line and latest prices

METALSMITHS

Division of **Orange Roller Bearing Co., Inc.**

568 White Street — Orange, N. J.

Specialists in Corrosion-Resistant Equipment for over 25 years

Patent Thoughts and Trends

By THOMAS CIFELLI, Jr., Patent Attorney*

PATENTS IN 1949

A brief review of the U. S. patent system highlights in 1949 appears to be timely and hence in order. As was done last year (This Journal January 1949, page 91) this review will fall into three parts:

I. Legislation involving patents;
II. Litigation involving patents; and
III. Developments in the U. S. Patent Office.

It is believed that even this brief review will show that the U. S. patent system today is, if anything, stronger than it was a year ago.

I—PATENT LEGISLATION

Congress let patents alone during 1949. While the usual number of bills relating to patents was introduced into the legislative hopper no enactments resulted. A definite trend can be discerned from the nature of the patent bills pending considered by the 81st Congress. This trend was noted in the August 1949 issue of This Journal and can be summed up by saying that most of the bills offered would have the effect of increasing patent rights and strengthening the patent system.

II—PATENT LITIGATION

The U. S. Supreme Court decided three cases of general interest in 1949. Two of them were decided in favor of the patent owner. The reader might well ponder this simple statistic. To the writer it means that a meritorious invention properly described and claimed in a patent will still be protected by the Courts, notwithstanding statements which are still bandied about, to the effect that a "patent is merely a license to sue" or a "patent is good until the Supreme Court lays its hand on it." Also, it undoubtedly will cause some concern among those who disregard patent rights of others, for the detection and proving of infringement these days is not as difficult as it once was. Finally, and most important, those who may have shied away at expending sums for research because of their fear that the results of the research could not be effectively protected—they can take heart.

As to the cases themselves, the first one is *Jungersen v Ostby* et al reported at 80 USPQ 32. In a 6-3 decision the U. S. Supreme Court held that U. S. 2,118,468, covering a method of casting articles of intricate design and the product thereof, was invalid, the majority of the court taking the position that the process was merely a refinement of the "lost wax" process described in the treatises of Benvenuto Cellini. The majority of the court did not feel that the considerable commercial success which met the patented process was sufficient to render the patent valid

The second U. S. Supreme Court case of 1949 involved *Graver Tank and Manufacturing Co. Inc.* et al v. the *Linde Air Products Co.*, and is reported at 80 USPQ 451. In this case the court in a unanimous decision upheld the validity of four claims dealing with fluxes for use in connection with an electric welding process. The case is reported in some detail in the April 1949 issue of This Journal

The third Supreme Court case was that of *Faulkner* v. *Gibbs*, reported at 83 USPQ 192. This case involved a technical question as to whether or not the claims were invalid because the language was too broad at the precise point of novelty The court held that the language was not too broad. Mr. Justice Black dissented

In addition to the number of actual opinions handed down by the U. S. Supreme Court, it also hands down a large number of brief decisions, stating whether or not it will receive a case on certiorari. In one of these memorandum decisions, the Supreme Court refused to grant certiorari in the hair waving case involving reissue patent 22,660,nd U. S. patent 2,051,063, which patents had been declared invalid by the Circuit Court of Appeals for the Seventh Circuit.

III—DEVELOPMENTS IN THE U.S. PATENT OFFICE

While the Patent Office is still working on a war-borne backlog of patent applications, 1949 saw a continuation of the speed-up procedures previously instituted and the introduction of other similar procedures expediting patent office matters. These for the most part are of interest mainly to patent attorneys but two are believed to be of general interest. The Patent Office will now permit a Markush claim in the same case having a broader generic claim. Also, five different species may now be claimed in the same case having an allowable generic claim, as against three which were formerly permitted.

On December 1, 1949 the resignation of Colonel Lawrence C. Kingsland as U. S. Commissioner of Patents became effective, and the Honorable John A. Marzall of Chicago became the new Commissioner. Colonel Kingsland won the admiration and respect of all branches of the patent field for the excellent job he did while Commissioner.

PATENTED COSMETIC CREAMS AND LOTIONS—PART III

Parts I and II appeared in the November and December, 1949, issues of This Journal, respectively. Part I dealt with the expired U. S. patents. Part II began a consideration of the unexpired U. S. patents and the present installment completes the abstracts of the unexpired U. S. patents.

Unexpired U. S. Patents

U. S. 2,216,485, issued Oct. 1, 1940 to Robert Louis Brandt, assigned to Colgate-Palmolive-Peet Co.

This patent deals with the use of an efficient and versatile dispersing agent in cosmetic emulsions. The emulsifier is said to work in both basic and acidic media and to be extremely effective, rendering it possible to make stable emulsions by including only a very small amount of the agent. Emulsions containing this agent are said to be stable even at very high and very low temperatures and to be non-toxic.

The special dispersing agent is a sulphonated mineral oil derivative disclosed in U. S. patent 2,149,661, U. S. patent 2,179,174, etc. The sulphonated mineral oil derivative is the reaction

*Newark, New Jersey

product of a liquid sulphur dioxide solution of a material obtained from mineral oil by solvent extraction, and a sulphonating agent.

The patent gives examples of cold cream, vanishing cream, cleansing cream, hand lotion, shaving cream, shampoo, dental cream, laxative, insecticide, etc., containing the emulsifying agent.

The only claim in the case is as follows:

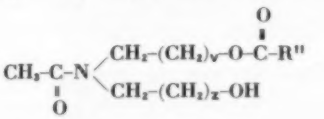
A cosmetic cream emulsion comprising oleaginous and aqueous materials and, as an essential ingredient, a sulphonated material formed by sulphonating mineral oil extract while it is dissolved in liquid sulphur dioxide.

U.S. 2,259,466, issued Oct. 21, 1941 to Benjamin R. Harris and Frank J. Cahn, assigned to The Emulsol Corp.

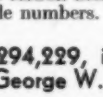
This patent discloses a new class of emulsifiers.

Claim 14 is illustrative:

A cosmetic preparation comprising an emulsion of oleaginous and aqueous materials, the oleaginous material comprising predominantly a normally solid higher molecular weight fatty acid, and containing a proportion of a chemical compound corresponding to the general formula



wherein



is a fatty acid acyl radical containing at least eight carbon atoms, and v and z are small whole numbers.

U. S. 2,294,229, issued Aug. 25, 1942 to George W. Fiero

According to this patent cosmetic preparations containing a substance selected from the group consisting of hydrogenated castor oil having a melting point above 40°C. and an iodine value less than about 70, 12-hydroxy stearic acid and soaps thereof have properties which make them far superior to cosmetic preparations heretofore manufactured. Thus ointments and salves prepared from a base comprising chiefly one of the above materials are said to be much harder than ointments and salves prepared from other hydrogenated oils having similar iodine values. This property is said to permit the ointments and salves to adhere much more tenaciously to the skin. Furthermore, the ointments and salves are also said to possess a much more pleasant feel than do the ointments and salves prepared from the hydrogenated oils previously employed. Finally, ointments and salves prepared in accordance with the teachings of this patent are said to be free of the disadvantages incidental to similar preparations, since they do not tend to become rancid and do not possess any undesirable odors.

The use of the special agents named above is covered rather broadly in cosmetic preparations, as may be seen from claim 1 of the patent, which follows:

A cosmetic preparation, containing as the base thereof, a substance selected from the group consisting of hydrogenated castor oil having a melting point above about 40°C. and an iodine value less than about 70, 12-hydroxy stearic acid and soaps thereof.

U. S. 2,309,722, issued Feb. 2, 1943 to Benjamin G. Wilkes and Helen E. Wassell, assigned to Carbide and Carbon Chemicals Corporation

The inventors propose to use certain polyalkylene glycols in hair dressing preparations and permanent waving solutions. Hair dressing preparations with these glycols are said to impart a well-groomed appearance without such objectional features as excessive stickiness or oily appearance. Further, because of their complete solubility in water, these dressing constituents can readily be applied to the hair and uniformly distributed without the use of organic solvents. Also, they can be removed from the hair without employing detergents.

A new "permanent" is usually required or desired before the waves of a previous "permanent" have been entirely removed by growth of the hair. Polyalkylene glycols may be applied directly to the ends of such hair to prevent the extreme drying effect of the recurling operation as well as to avoid too tight a curl.

Further advantages of the polyalkylene glycols are said to be their ability to impart superior softening and smoothing of the skin and to render the emulsions stable over prolonged periods of time, without developing rancidity.

Claim 1 is illustrative:

A toilet preparation for dermal application containing as an essential ingredient a polyoxyalkylene glycol of the 1,2 series containing not more than three carbon atoms in each oxyalkylene radical, said polyoxyalkylene glycol having an average molecular weight not less than about 400.

U. S. 2,320,478, issued June 1, 1943 to George Sperti, assigned to The Institutum Divi Thomae Foundation

According to this patent all cosmetics and detergents possess the undesirable property of depressing tissue respiration, thus exaggerating the normal decline in respiration which takes place with increasing age as well as the depressed respiration existing under ordinary conditions. Creams are usually less active depressants than are soaps and lotions. The depressant effects of cosmetics are said to be attributed to a number of causes each of which is probably operative to a variable degree. Among these causes are the effects of antiseptics, fatty acids, and unphysiological pH.

The idea of this patent is to counteract the depressant effects of cosmetics by incorporating therein agents having the property of stimulating tissue respiration. Such agents are the concentrated water-soluble constituents of cellular matter, such as yeast.

Examples of vanishing creams, cold creams, soaps, skin fresheners, etc., containing the respiratory stimulating agent are given in the patent, claim 1 of which follows:

A toilet preparation for topical application comprising a preparation which depresses the respiration of the tissue to which it is applied combined with a respiratory stimulating agent which stimulates the tissue respiration as determined by manometric measurements and thereby compensates at least in part for the depressing effect of said preparation.

U. S. 2,333,093, issued Nov. 2, 1943 to Frederick E. Dearborn

This invention relates to cosmetic preparations utilizing sulphur compounds of the aliphatic unsaturated monocarboxylic acids, their glycerides, and their mono-hydric esters. The idea is to employ the sulphur in chemically-combined form, which is said to render the sulphur easier of absorption by the skin, hair or scalp.

Vegetable and animal oils and fats containing considerable amounts of the glycerides of the unsaturated monocarboxylic acids are used. Thus, for example castor oil and olive oil treated with sulphur to cause chemical combination therewith are illustrative.

Claims 1 and 2 give an idea of the protection:

1. A neutral cosmetic preparation comprising sulfurized castor oil dissolved in a monohydric alcohol.
2. A neutral cosmetic preparation comprising the product resulting from esterifying sulfurized olive oil with mono-hydric alcohol.

U. S. 2,361,477, issued Oct. 31, 1944 to William B. Humes, assigned to National Research Corporation

An improved emulsifying agent is disclosed in this patent, the agent being obtained by subjecting beeswax to a distillation at extremely low pressures, within the range of 1.0 to .001 mm. of mercury. The acid number and ester number of the resulting distillate, as well as an idea of the claim coverage is obtained from claim 1, which follows:

(*Continued on page 110*)

In each of these great centers of the Soap, Perfumery and Cosmetics industries there is a Chiris company, with a complete production and distribution service. These companies pool all the experience and technical resources which nearly 200 years of outstanding leadership in the World's Essential Oil and Aromatic industries have made available to the House of CHIRIS.

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Industry's Books

The Essential Oils, by Ernest Guenther, Ph.D., Vice President and Technical Director Fritzsche Brothers, Inc., Volume 3, Individual Essential Oils of the Plant Families, Rutaceae and Labiatae, 777 pp., Illus., D. Van Nostrand Company, Inc., New York, $10.

The Third and the succeeding volumes of the series "The Essential Oils" will consist of monographs on individual oils, describing their botanical and geographical origin, methods of cultivation of the plants from which they are derived, techniques of distillation and yield of oil, their physiochemical properties, chemical composition, total production, and uses in the industry. The individual oils are grouped within the families to which the respective aromatic plants belong, but in the sequence of the plant families no botanical system is followed. This arrangement has been chosen for the practical purpose of giving first place to those families the essential oils of which are technically and commercially most important.

Thus, the present volume describes the oils of the plant families Rutaceae (with special emphasis on the very important citrus oils) and Labiatae. The policy of arranging the families according to commercial and practical utility will be adhered to throughout the following volumes, but at the end of the last volume there will be a table or key showing the classification of the essential oils according to a modern botanical system. Described here, and scheduled for inclusion in future volumes, are only those oils that are of technical importance and actually used in our industry, or offer at least commercial possibilities, or incite particular scientific interest. It appears preferable to describe these oils from every angle and on good authority, rather than to indulge in a futiel discussion on countless experimental oils about which many factors, particularly their botanical origin, are highly questionable. In the discussion of each individual oil the author has depended not only upon his own experience accumulated during many years of work in the essential oil-producing regions all over the world, but also upon the experience of Fritzsche Brothers, Inc., in producing and handling essential oils for almost eighty years.

The Chemistry of Organic Medicinal Products, by Glenn L. Jenkins, Professor of Pharmaceutical Chemistry and Dean of the School of Pharmacy, Purdue University, and Walter H. Hartung, Professor of Pharmaceutical Chemistry School of Pharmacy, The University of North Carolina, Third Ed., 745 pp., John Wiley & Sons, Inc., New York, $7.50.

This book offers a comprehensive coverage of the field. Every chapter has been thoroughly revised, partly or wholly rewritten, additions have been made, and new medicinal products have been included. Among the discussions are such items as streptomycin and active products mentioned in the antimalarial survey . . . antibiotics, synthetic antimalarials, sulfonamide compounds, amino acids, antihistaminic drugs, enzymes, and folic acid . . . and recent discoveries that have not resulted in the development of acceptable drugs but which furnish incentives for future research. Throughout the book there are extensive references to the original literature, to review articles, and to pertinent books. These references enhance the value of the book to students desiring further study.

The Plant Alkaloids, by Thomas Anderson Henry, D. Sc. (Lond.), Formerly Director, Wellcome Chemical Research Laboratories and Superintendent of Laboratories, Imperial Institute, London, Fourth Ed., 804 pp., Tables, The Blakiston Company, Cloth, $14.

The material in this work is dealt with primarily on the basis of a chemical classification according to nuclear structure, modified in cases where an extensive series, including several chemical types, occurs in one plant, or in closely related plants. When a chemical group is dealt with in more than one place, cross references have been provided. Contents: Pyridine Group; Tropane Goup; Lupinane Group; isoQuinoline Group; Phenanthridine Group; Quinoline Group; Indole Group; Pyrrolidine Group; Pyrrolizidine Group; Quinazoline Group; Glyoxaline Group; Alkaloidal Amines; Steroidal Alkaloid Group; Alkaloids of Undertermined Constitution; Minor Alkaloids; Recorded Occurrences of Alkaloids; Index.

The Terpenes, Vol. II, The Dicyclic Terpenes and Their Derivatives, by J. L. Simonsen, Second Ed., Revised, by Sir John Simonsen, D. Sc., Director of Research, Colonial Products Research Council, and L. N. Owen, B. Sc., Lecturer in Organic Chemistry, Imperial College of Science and Technology, South Kensington, 619 pp., Cambridge University Press, New York, $8.50.

During the eighteen years which have elapsed since the publication of the first edition of this work, knowledge of the chemistry of the dicyclic terpenes and the sesquiterpenes has greatly increased. This volume is therefore devoted to the chemistry of the dicyclic terpenes, and a third volume, in preparation, will be devoted to the sesquiterpenes and diterpenes. In the first section of this volume the chemistry of the dicyclic terpenes and their derivatives are surveyed. Few, if any, natural products have formed the subject of such intensive study as the pinenes and camphor. Owing to their close relationship to many substances of outstanding biochemical interest, special importance attaches to the sesquiterpenes, which are discussed in Section II. Within the last decade, due to the brilliant investigations of Ruzicka and his collaborators, their chemistry has been gradually elucidated, but much remains to be accomplished. No attempt has been made to refer to all the sesquiterpenes, which have been described in the literature, and only those which appear to be definitely homogeneous have been discussed.

Clinical Chemistry in Practical Medicine, by C. P. Stewart, Ph.D., Reader in Clinical Chemistry, University of Edinburgh, and D. M. Dunlop, M.D., Christison Professor of Therapeutics and Clinical Medicine, University of Edinburgh, Third Ed., 324 pp., The Williams and Wilkins Co., Baltimore, $5.

During the past twenty years biochemistry has become a subject of ever-increasing importance in medicine; especially is this the case in the diagnosis, prognosis, and treatment of the so-called metabolic diseases. But there is hardly a branch of medicine or surgery which does not, at some time, have need of the

(*Continued on page 97*)

YOUR TRADE-MARK RECORD

By JOHN H. GRAHAM
International Patent and Trade-Mark Consultant

Are Slogans Registrable as Trade-Marks?

When the Lanham Act was first published, we pointed out how wide the powers were set to receive almost anything as a trade-mark. We also urged caution in assuming that all slogans, radio call letters, and so on, could be registered as trade-marks. Now that the Lanham Act is in it's third active year, sufficient marks have been registered to give us some idea of what can be considered by the Patent Office as registrable.

First of all, we must remember that the new Act set up two registers. The principal register is the main and most important one. Marks registered on that are incontestable after five years and other major advantages appear. The second register is the Supplemental register. This is a kind of catch-all for those marks refused on the Principal Register. Marks can be filed under the Principal Register and switched to the Supplemental Register, if found wanting. Marks on the Supplemental Register are not incontestable and do not have many of the other advantages which the Lanham Act provides.

Having set up these facts, let us look at the record as to slogans. As we reported in these columns several months ago, "5 full glasses in every bottle" was refused registration with respect to soft drinks on the ground that it was too descriptive of the goods themselves.

In a similar way "The fate of a fabric hangs by a thread" was refused registration for textiles.

However, there is no indication that these were rejected merely because they consisted of a string of words, which when associated together have a definite meaning, as opposed to arbitrary marks. The main reason for refusing them was that they only served the function of advertising copy and thus could not be exclusively used. Nor could they act to denote origin or ownership of the goods, which is a primary function of a trade-mark. There is no question at all that a series of words with a definite meaning, such as a slogan, can be registered.

The following is a list of some slogan-type of marks which have been registered:

"WHEN A SLIP BECOMES A SOCIAL ERROR SWITCH TO MARY BARRON" for ladies slips and night gowns.

"WE PUT THE WORLD TO SLEEP," for beds and similar furniture.

"ALWAYS A SHADE AHEAD," for hosiery.

"THERE'S NEVER A DULL MOMENT WITH CHANGE-A-BLADE SCISSORS," for scissors, etc.

"YOUR WORD TO WISE IS SUFFICIENT," for Jewelry, issued to a Firm named Wise.

"THE GOLDEN VOICE OF THE SILVER SCREEN," for Motion picture materials.

"FROM FOREST TO FASHION," for shoe trees on lasts.

"FAMOUS FOR ITS LATHER," issued to J. B. Williams Co., for shaving soap.

"ABSORBS GRIME, SAVES TIME," issued to French Chemical Co., for soaps.

It is of interest to note that all of these slogans were filed originally on the Principal Register, but transferred and registered on the Supplemental Register.

It is of even greater interest to note that, as in all other forms of marks, it is just as difficult to judge whether or not a slogan can be registered, using the adverse decisions and the marks registered as a yard stick.

The following Trade-Marks were recently published in the Official Gazette of the United States Patent Office.

Ambiance—VI—ABCDHK—570,917
Wolff Fres, Inc., N. Y., N. Y.
Ser. Dec. 21, 1948 D. U. Dec. 7, 1948

Annis Manor—VI—CH—558,346
The Cage Co., Waxahachie, Texas
Ser. June 3, 1948 D. U. May 1, 1948

Arfus—VI—T—570,485
D. C. Fussell, DBA A. & F. Remedy Co., Raleigh, N. C.
Ser. Dec. 14, 1948 D. U. June 19, 1947

Ballerina—VI—ABCH—508,142 (and des.)
Coty, Inc., N. Y., N. Y.
Ser. Aug. 28, 1946 D. U. Aug. 19, 1946

Chevron—VI—T—545,043
Standard Oil Co. of California, San Francisco, Cal. & Wilmington, Del.
Ser. Dec. 20, 1947 D. U. Feb. 26, 1942

Connie Perth—VI—BH—514,759
Griet & Cia. S.R.L. Buenos Aires, Argentina
Ser. Dec. 24, 1946 D. U. March 6, 1946

Debony—VI—H—562,677
Arthur J. White, Inc., Battle Creek, Mich.
Ser. Aug. 2, 1948 D. U. July 29, 1948

Disho—IV—A—549,199 (and des.)
The M. Werk Co., St. Bernard, Ohio
Ser. Feb. 9, 1948 D. U. Oct. 7, 1937

Dr. N. G. Payot—VI—BCH* 506,174
Labs. Du Dr. N. G. Payot, Paris, France
Ser. July 24, 1946 D. U. Nov. 3, 1927

Duon—VI—AC—562,605
Duon, Inc., Coral Gables, Fla.
Ser. July 31, 1948 D. U. Since 1944

English Bluebells—VI—B—544,017
Bonne Bell, Inc., Lakewood, Ohio
Ser. July 24, 1947 D. U. June 10, 1940

Erasmic—VI—BCH—562,549
Erasmic Co., Ltd., Warrington, Lancashire, England
Ser. July 30, 1948 D. U. April 3, 1914

Fab—IV—A—566,974
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Ser. Oct. 14, 1948 D. U. Jan. 29, 1920

First Lady—VI—G—570,229
Rilling Co., N. Y., N. Y.
Ser. Dec. 8, 1948 D. U. Oct. 22, 1948

Georg Jensen Inc.—VI—BC—505,109
Georg Jensen Inc., N. Y., N. Y.
Ser. July 5, 1946 D. U. July, 1943

Griet—VI—BH—514,760 (and des.)
Griet & Cia. S.R.L. Buenos Aires, Argentina
Ser. Dec. 24, 1946 D. U. Jan. 14, 1928

Helene Curtis—VI—ACGH—528,120
Helene Curtis, Industries, Inc., Chicago, Ill.
Ser. July 8, 1947 D. U. June 1, 1928

Joy—IV—A—566,767
The Procter & Gamble Co., Cinn., Ohio
Ser. Oct. 9, 1948 D. U. June 19, 1920

Lady Olivia—VI—G—566,465 (and des.)
Lady Olivia, Inc., Boston, Mass.
Ser. Oct. 5, 1948 D. U. Sept. 27, 1948

Lengyel—VI—ABCDEH—547,727
M. Handman, DBA Maurella Products, Co., N. Y., N. Y.
Ser. Jan. 22, 1948

Les Parfums Brisson—VI—BC—560,-029
Les Parfums Brisson, S.A.R.L. Paris, Fr.
Ser. Sept. 13, 1949 D. U. Jan. 29, 1948

Licresolis—VI—D—563,882
West Disinfecting Co., Long Island City, N. Y.
Ser. Aug. 23, 1948 D. U. October, 1915

Light Touch—VI—C—569,502
Beauty Counselors, Inc., Grosse Pointe, Mich.
Ser. Nov. 27, 1948 D. U. Nov. 16, 1948

Lord English—VI—I—560,951
Frank Adorn, DBA Little Princess Products, N. Y., N. Y.
Ser. July 9, 1948 D. U. July 1, 1947

Luron—IV—A—547,476
Pacific Coast Borax Co., Los Angeles, Cal.
Ser. Jan. 19, 1948 D. U. Oct. 29, 1947

Mademoiselle Chanel 31 Rue Cambon—VI—B—551,168
Chanel, Inc., N. Y., N. Y.
Ser. March 4, 1948 D. U. Feb. 17, 1948

Merle Norman—VI—BCDE—549,164
Merle Norman Cosmetics, Inc., Santa Monica, Cal.
Ser. Feb. 9, 1948 D. U. July 27, 1928

Milky—VI—H—538,249
Helene Curtis Industries, Inc., Chicago, Ill.
Ser. Oct. 18, 1947 D. U. Sept. 1, 1940

Minlys—VI—BC—530,527
Lancome, S.A. Paris, France
Ser. Aug. 5, 1947 D. U. Nov. 29, 1945

Morning Mist—VI—C—563,930
Interstate Sales Co., Waco, Texas
Ser. Aug. 24, 1948 D. U. Aug. 17, 1945

Nina Dobrova—VI—H—565,840 (and des.)
Nina Dobrova, N. Y., N. Y.
Ser. Aug. 22, 1948 D. U. Dec. 1, 1947

O-Protex—VI—F—578,356 (and des.)
Stewart-Simmons, Inc., Mason City, Iowa
Ser. May 6, 1949 D. U. Sept. 15, 1948

Pento—VI—ABCEHI—550,123
Commanditaire Vennoostchap Pento Cosmetic, Amsterdam, Holland
Ser. Feb. 19, 1948 D. U. March 20, 1936

Pretty As A Picture—VI—C—557,557
Prince Matchabelli, Inc., N. Y., N. Y.
Ser. May 21, 1948 D. U. April 19, 1948

Prodige—VI—B—569,276
Lanvin-Parfums, Inc., N. Y., N. Y.
Ser. Nov. 23, 1948 D. U. Nov. 4, 1948

Rejane—VI—BCH—500,669
Laboratorios de Productos de Belleza, Irene Darie, S.A. Habana, Cuba
Ser. April 22, 1946 D. U. March 10, 1944

Royal-Ray Scalp Oil—VI—H—563,784 (and des.)
E. W. Hill, DBA The Webb Co., Evanston, Ill.
Ser. Aug. 20, 1948 D. U. July, 1948

Sayman—IV—AHI—557,963
Sayman Products Co., St. Louis, Mo.
Ser. May 27, 1948 D. U. Jan. 1, 1893

Sayman—VI—CIKM—557,964
Sayman Products Co., St. Louis, Mo.
Ser. May 27, 1948 D. U. Jan. 1, 1880

Snow Man—VI—B—568,600
Elizabeth Arden Sales Corp., N. Y., N.Y.
Ser. Nov. 12, 1948 D. U. Oct. 1, 1947

Southern Weed—VI—M—570,314
L. Neal, DBA Southern Weed Co., Salisbury, N. C.
Ser. Dec. 10, 1948 D. U. March 1, 1922

Startling—VI—BC—528,914
Eisenberg & Sons, Inc., Chicago, Ill.
Ser. July 19, 1947 D. U. June 13, 1941

Te—Riff—VI—E—517,207
Te Riff Co., Los Angeles, Calif.
Ser. Nov. 4, 1947 D. U. Jan. 21, 1947

The Herb Farm Shop Ltd.—VI—BC—541,623
The Herb Farm Shop, Ltd., Elizabeth, N. J.
Ser. Nov. 17, 1947 D. U. October, 1938

Tiny Deb—VI—ACH—507,701
Weldon, Inc., West Haven, Conn.
Ser. Aug. 20, 1946 D. U. January, 1946

Treasure-Stick—VI—C—523,268
Richard Hudnut, N. Y., N. Y.
Ser. May 29, 1947 D. U. May 16, 1947

Tundra—IV—A—569,867
Les Parfums de Dana, Inc., N. Y., N. Y.
Ser. Dec. 3, 1948 D. U. Nov. 1, 1948

Wisp—VI—D—563,777
Coty, Inc., N. Y. ,N. Y.
Ser. Aug. 20, 1948 D. U. Feb. 28, 1948

Wits End—VI—C—570,096
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Ser. Dec. 7, 1948 D. U. Nov. 12, 1948

Act of 1946

The following Trade-Marks have been recently republished under the terms of the above (Lanham Act). No opposition can be filed against them but they are all subject to cancellation proceedings.

Botany—VI—C—376,810
Reg. April 9, 1940 To Botany Worsted Mills
Repub. by Botany Mills, Inc., Passaic, N. J.

Energy—IV—A—354,193
Reg. Feb. 8, 1938 To National Retailer-Owned Grocers, Inc., Chicago, Ill.
Repub. by registrant

Formula—T—IV—I—302,392
Reg. April 18, 1933 To Samuel Tinsky, Repub. by Consolidated Cosmetics, Chicago, Ill.

Golden Corsage—VI—ABC—443,182
Reg. Aug. 2, 1949 To The Lander Co., Inc., N. Y., N. Y.
Repub. by registrant

Mackies—VI—H—282,918 (and des.)
Reg. May 5, 1931 To Mackie Pine Oil Specialty Co., Inc.
Repub. by H. A. Mackie & J. Harry Warner, Jr., Covington, La.

Mar-O-Oil—VI—H—383,030
Reg. Oct. 15, 1940 To Marrow's Inc., Chicago, Ill.
Repub. by registrant

Nordoil—VI—BCDEK—236,403
Reg. Dec. 13, 1927 To Norda Essential Oil & Chemical Co., Inc., N. Y., N. Y.
Repub. by registrant

Praxe—VI—ABCDEHI—414,239
Reg. May 29, 1945 To Gordon A. Greenspon, Washington, D. C.
Repub. by registrant

Rosetta—VI—C—261,968
Reg. Sept. 24, 1929 To Elizabeth Arden, Inc.
Repub. by Elizabeth Arden Sales Corp., N. Y., N. Y.

Westphal's—VI—ABH—210,944
Reg. March 30, 1926 To Paul Westphal
Repub. by Paul Westphal, Inc., N. Y., N. Y.

Liver Products and the F.D.A.

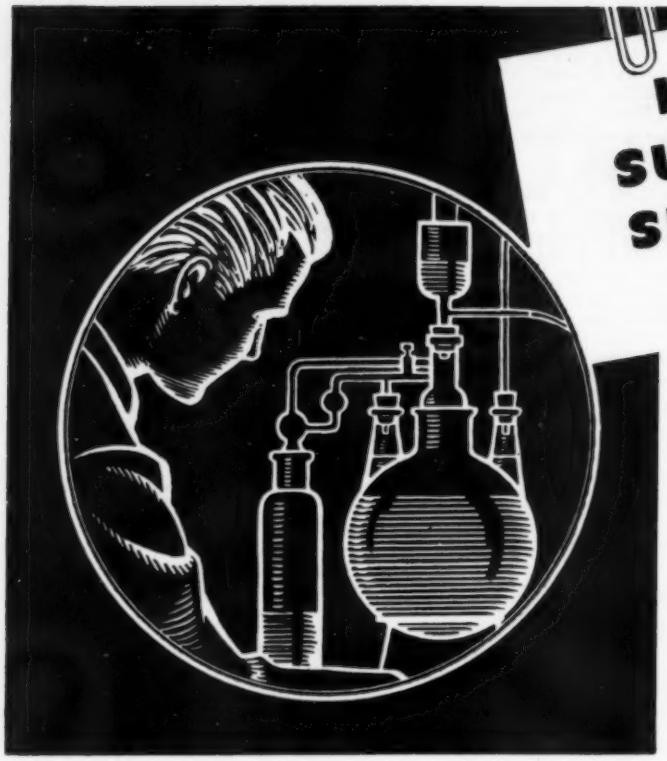
(Continued from page 35)

"A general conference for the purpose of discussing the problem has been considered; but it appears that, for the present at least, written communications will serve as well as oral discussion.

"The purpose of this communication is to state this Administration's present views and to invite the submission of pertinent information. Data from scientifically controlled experimental studies based on the use of specifically defined preparations will be particularly helpful. Vague or hazy impressions based on inadequate or ill-controlled studies, particularly with reference to the effects of combinations of liver preparations with other drugs or nutritional factors which throw little or no light on the effect of the liver ingredient, obviously will not be helpful.

"In evaluating the labeling of these articles, the Administration will consider, among other things, the following points:

1. What therapeutically active or nutritionally significant ingredient or ingredients they contain.
2. What therapeutically or nutritionally useful purposes they serve.
3. In what dosages per day are they efficacious for such purposes."



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Compounder's Corner

Safety of Cold Wave Preparations

In the *Journal of the American Medical Association* (141:842, 1949), A. J. Lehman presents a discussion of local and systemic effects which may result following exposure to chemicals used in the "cold" permanent waving of hair. Among these are the alkaline sulfites, alkaline solutions of ammonium hydrogen sulfide and, currently popular, the various salts of thioglycolic acid. Thioglycerol is also an efficient agent, but because of manufacturing difficulties its use has been limited. Large volume production is now possible, and thioglycerol may assume greater commercial importance.

Following a consideration of the chemical aspects of cold permanent waving and the pharmacology of the compounds used in the process, he observes that the mercaptans in current use as hair-waving preparations are capable of producing local and systemic toxic effects. It has been demonstrated experimentally that in thioglycolate-treated animals the adverse effects are due primarily to the thioglycolate ion and not to the contaminant (thio-ether) or its oxidation product (thiodiglycolate ion). The poisoning is an acute phenomenon and recovery is rapid.

Thioglycerol produces thyroid hyperplasia in experimental animals. A high incidence of sensitization has also been obtained with this material in experimental animals. These observations should be carefully appraised.

Very significant, however, is Lehman's statement that the number of cold waves given each year employing salts of thioglycolic acid can no doubt be estimated in the millions. The number of complaints in comparison with the total number of applications is small. From rigorous laboratory evaluation of the hazards involved, it may be stated that the judicious use of ammonium thioglycolate as a hair-waving preparation should prove a relatively innocuous procedure. The majority of complaints from patrons and operators are probably due to the misuse of the product because of failure to heed directions or precautions. Allergic responses to the thioglycolates appear to have occurred only rarely.

Of like interest and in a similar vein is the report presented by H. T. Behrman at the December 8, 1949 meeting of the Society of Cosmetic Chemists. His report is concerned with the effects of certain cold wave lotions on the health of 1,200 persons who voluntered for tests of these products. This was determined by the use of adequate numbers of paired patch tests on subjects with no known previous contact with cold waving solutions and by varying contact with the solutions. By the retesting of each subject within two to four weeks, and by interpreting the results in conjunction with a large body of data obtained under conditions of actual use of the waving solution, it was concluded that these solutions have a low degree of irritancy, even when used in concentrations triple that used in practice, and a negligible power of sensitization.

In addition, a very complete series of clinical and laboratory examinations was performed on a group of heavily exposed persons to ascertain the presence of any systemic manifestations of toxicity. In the literature, attention has been directed to toxic manifestations, primarily of a hepatotoxic nature, resulting from the use of the cold wave preparations. Careful and intensive studies of a clinical and laboratory nature do not support the contention that toxic manifestations result from the use of cold wave preparations. Evidence of systemic toxicity from frequent exposure to the cold waving solutions tested was not found.

Antibacterial Action of Sodium Lauryl Sulfate

Because sodium lauryl sulfate is being increasingly used in the compounding of pharmaceuticals, M. Witt (*Australasian J. Pharm.* 30:674, 1949) carried out a series of experiments in order to determine its antibacterial activity against five representative microorganisms. The results of the bacteriological tests with this surface active agent indicate that in concentrations of over 1 in 6000 (i.e. concentrations likely to be used in the preparation of pharmaceuticals), sodium lauryl sulfate is bactericidal *in vitro* against the Gram-positive organisms Clostridium welcheii, *Streptococcus pyogenes* A, and *Staphylococcus aureus*. However, in concentrations of less than 1 in 10, sodium lauryl sulfate is ineffective, *in vitro*, against the Gram-negative organisms *Bacterium coli* and *Proteus vulgaris*.

Improved Brilliantine Cream

Following a study of the usual types of brilliantine creams based on triethanolamine stearate or borax-beeswax combinations, S. Druce (*Manuf. Chem. & Manuf. Perf.* 20:534, 1949) decided that a combination of water-in-oil and oil-in-water emulsifying agents might yield better results. He concedes that according to an old theory it is wrong to use in conjunction emulsifying agents tending to yield emulsions of opposing types, but in practice it has been observed that this theory is not always correct. It was from this viewpoint that he prepared a series of brilliantine creams based on the following formula:

Mineral oil	**33.00 parts**
Beeswax	**3.00** "
Stearic acid	**0.50** "
Cetyl alcohol	**1.30** "
Chlorcresol	**0.10** "
Borax	**0.25** "
Triethanolamine	**1.85** "
Water	**59.80** "
Perfume	**sufficient**

The oils, fats and waxes are melted at 60°C. to 65°C. and added to the aqueous phase containing the triethanolamine and borax at the same temperature. The cream is then stirred and cooled, and no further processing, such as passing through a colloid mill or homogenizer, is necessary. The viscosity can be altered by adjusting the oil, wax, water ratio, and, unlike many of the cream brilliantines which are difficult to remove from their containers, the cream described can readily be removed from the jar after gentle shaking. It has been found that the presence of chlorcresol not only preserves the cream under most conditions of storage, but also helps to maintain the scalp in a clean and healthy condition. The usual precautions should also be taken of trying out the perfume so as to ensure that no undesirable effects are produced. Generally speaking, the most useful

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perfumes are those based on the bergamot-neroli type.

Druce remarks that these creams showed a remarkable improvement over the triethanolamine stearate and borax beeswax creams. They form white fluid emulsions with a high brilliance, and rub out easily and quickly on the skin. After two years on shelves in the laboratory exposed to the sun, there is not the slightest sign of separation or discoloration, and the creams are practically the same as when freshly prepared.

Methyl Cellulose in Collyria

According to G. L. Phillips (*Bull. Am. Soc. Hospital Pharm.* 6:118, 1949) it appears that methyl cellulose is being prescribed more and more frequently by ophthalmologists to increase the viscosity of solutions intended for use in the eye. A typical formula is given as follows:

Methyl cellulose (4000 cps.)	**1.0 Gm.**
Benzalkonium chloride, 1:5000 solution, to make	**100.0 cc.**

A clear, fully dissolved solution is obtained by heating the benzalkonium ("Zephiran") solution to boiling, then add the methyl cellulose and wet thoroughly by agitating with a stirring rod. Cool the mixture, then place in freezing compartment of a refr gerator and chill. Stir until homogeneous. Methyl cellulose is insoluble in hot water, but very soluble in ice cold water.

Shaving Preparations

In *Soap, Perfumery & Cosmetics* (22:-1131, 1949), H. Janowitz presents a brief but comprehensive discussion on various types of shaving preparations. Thus, in his opinion, a basic type of formula for shaving soap is as follows:

Stearic acid	**100.0 parts**
Glycerine	**5.0 "**
Caustic potash lye (39°Be)	**40.2 "**
Caustic soda lye (37° Be)	**11.4 "**
Coconut soap	**30.0 "**

The coconut soap is incorporated in the mixer with the stearic acid soap, or, alternatively, the coconut soap may be dissolved in the mixed alkali solution, with addition of a proportion of glycerine the batch being then neutralized by the addition of stearic acid, well mixed and run into frames or shaped molds. The addition of traces of cetyl alcohol, petroleum jelly and cold cream base, may be considered desirable.

Lathering shaving creams are essentially dilutions of shaving soap with water, with the stearic acid sometimes partly replaced by myristic acid. Triethanolamine stearate, cetyl and stearyl alcohols and also sodium alginate, may be present in formulae of this type, together with minor amounts of other soap materials. Quite a good simple type of formula for such a product is given as follows:

Caustic potash lye (42° Be)	**7.5 parts**
Coconut oil	**3.0 "**
Glycerine	**3.0 "**
Stearic acid	**14.0 "**
Water	**16.0 "**

The coconut oil cold-processed soap is made with part of the lye. When the soap has been formed, it is diluted with the rest of the lye and neutralized with the stearic acid, the water being then brought up to the indicated volume and the glycerine is also incorporated with constant stirring. This cream should be aged at least a fortnight before filling and, after this lapse of time, it should be a good smooth emulsion.

Brushless shaving creams usually have a vanishing cream or modified vanishing cream base, often with the addition of mineral oil, glycerine and a trace of lanolin. Glycols, sorbitol syrup and sodium alginate may also be present in formulae of this type. A typical formula calls for:

Stearic acid	**18 parts**
Lanolin	**3 "**
Mineral oil	**3 "**
Glycerine	**5 "**
Triethanolamine	**2 "**
Borax	**2 "**
Water, to make	**100 "**

Janowitz observes that the latest development in this line is the two-way shaving cream. If the user has time, he may make a lather with it, by using water or, if he is in a hurry, he may use it as an ordinary brushless cream. The formula given just above could serve as quite a useful cream of this type. If the stearic acid is increased, it becomes a more definite brushless type, whereas if the soap content is higher, one gets quite a highly saponified shaving cream.

He remarks after-shaving lotions and jellies are chiefly notable for their content of menthol, which incidentally should not be overdone if risk of irritation is to be avoided. A Jelly, intended to counteract the irritation of the razor, consists of:

Gum tragacanth	**4.0 parts**
Boric acid	**2.0 "**
Menthol	**0.1 part**
Salicylic acid	**0.4 "**
Glycerine	**10.0 parts**
Water, to make	**100.0 "**

An after-shave lotion may be made along the following lines:

Witch hazel extract	**15.0 parts**
Alcohol	**10.0 "**
Alum	**0.5 part**
Menthol	**0.1 "**
Boric acid	**1.0 "**
Glycerine	**5.0 parts**
Water, to make	**100.0 "**

After-shaving powder, says Janowitz, consists essentially of talc, sometimes with the addition of zinc oxide, precipitated chalk, a little zinc stearate, etc. Many are uncolored, but male preference is usually for something with a light flesh-colored tint, getting away from the dead white effect, but not so noticeably tinted as face powder. A formula that he has found satisfactory is the following:

Talc	**91 parts**
Boric acid	**2 "**
Calamine	**5 "**
Zinc stearate	**2 "**

The calamine not only tints the preparation sufficiently but is also soothing and to a mild extent antiseptic.

Informative Booklet on Glycerine

The booklet, "Why Glycerine for Drugs and Cosmetics?" provides considerable information on the varied roles played by this important raw material in the formulation of pharmaceuticals and toilet goods. Its function as a humectant, solvent, sweetener, as well as other properties, are discussed in the publication. A number of charts provide detailed information on the specific gravity, viscosity, freezing points, vapor pressure and relative humidity. Other useful data regarding glycerine and its aqueous solutions are also given. A concise but comprehensive bibliography is included. Copies of the booklet may be obtained from Glycerine Producers' Association, Dept. P., 295 Madison Ave., New York 17, N. Y.

New Edition of Emulsion Booklet

Those who are familiar with the previous editions of the booklet on emulsions, published by Carbide and Carbon Chemicals Corp., will be pleased with their new eighth edition, now entitled, "Emulsions and Detergents." Copies are available from Carbide and Carbon Chemicals Corp., 30 East 42nd St., New York 17, N. Y.

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Advancing Therapy

Antihistaminic Drugs in Tuberculosis

Primary tuberculosis, say A. R. Judd and A. R. Henderson (*Ann. Allergy* 7:306, 1949) is characterized, in the great majority of cases, by its relative benignity and absence of tissue destruction. These characteristics are reversed in the reinfection or secondary phase. This reversal is dependent upon hypersensitivity to an antigen which is developed during the primary phase and maintained as long as tubercle bacilli remain within the body. Upon reinfection or spread of the bacilli from a primary site, there occurs an inflammatory reaction, which is characterized by exudation and may be followed by caseation necrosis. If this acute inflammation could be prevented, a significant advance in tuberculosis therapy would be achieved. It seemed possible that antihistaminic drugs might protect sensitized cells from injury and thus alter the course of the disease. The drugs employed were diphenhydramine (Benadryl), tripelennamine (Pyribenzamine), phenindamine (Thephorin), and thonzylamine (Neohetramine.) Patients were started on 50 mg. of the antihistamine three times daily. The dose was increased to 300 to 400 mg. per day, as tolerated. The highest daily dose given any patient was 500 mg., and the longest period of administration was seven months. Benadryl and Pyribenzamine were first used, but they were not well tolerated in large doses. When it was necessary to discontinue a drug because of side effects, patients were transferred to Neohetramine because it is reported to be less toxic than other available antihistaminics. Judd and Henderson stress that the least toxic drug should always be used, but this is especially true in an already toxic patient, particularly one fighting the insult of an acute exudative or pneumonic lesion. No significant changes were observed in the urine, erythrocyte sedimentation rate or differential leukocyte count. A moderate increase in pulse rate was almost always noted after institution of therapy.

A total of 30 patients is presented in their preliminary report. These included cases of tuberculous pneumonia, acute exudative lesions, mixed exudative and fibrotic lesions and advanced chronic fibrotic lesions. The greatest improvement occurred in patients with tuberculous pneumonia and other acute exudative lesions, which seem to be the result of hypersensitivity. The antihistamine drugs become less effective as the lesions progress in chronicity. The clinical improvement accompanying the administration of the antihistamines strongly points to the therapeutic effectiveness of these drugs even though improvement lasted only during the administration. The combined administration of antihistaminic drugs to suppress the allergic components of the disease and of streptomycin to suppress the growth of the bacillus may be effective.

Orthoxine in Bronchial Asthma

For a number of years, say I. W. Schiller and his associates (*New England J. Med.* 241:231, 1949) ephedrine drug has ranked with epinephrine as one of the most valuable medications for the treatment of bronchial asthma. Although less active as a bronchodilator than epinephrine, ephedrine is effective, and its action is prolonged. However, undesirable effects such as nervousness, tremulousness, sleeplessness, vertigo, sweating, anorexia, nausea and palpitation often interfere with the use of the drug or require the additional administration of sedatives. In the last few years, therefore, attempts have been made to produce sympathomimetic compounds with less effect on the cardiovascular and central nervous systems. One of these, orthoxine, orthomethoxy-b-phenylisopropyl methylamine hydrochloride, appears to have certain advantages over ephedrine.

In a clincial evaluation by Schiller and his coworkers, 50 patients with asthma were treated with this drug. The response of 27 out of 35 patients with mild or moderate asthma was excellent or fair with orthoxine, which compares favorably with other well-known oral sympathomimetic agents. However, the majority of patients in whom comparison was possible, preferred ephedrine to orthoxine. In the 15 patients with severe asthma, the drug was relatively ineffective. In most cases, these patients obtained relief with other medications. The investigators are of the opinion that although it did not appear to be quite as effective as ephedrine, orthoxine had the advantage of causing less disturbance of the cardiovascular and central nervous systems. It is concluded that orthoxine is a distinct contribution to the management of bronchial asthma.

New Antiparasitic-Antipruritic

The use of a new synthetic compound, N-ethyl-o-crotono-toluidine, in the treatment of scabies and various pruritic dermatosis is evaluated in the report of M. Couperus (*J. Investig. Dermat.* 13:35, 1949). In its pure form this compound is a colorless, odorless oily liquid with a specific gravity of 1.009, and a pH of 6. It is practically insoluble in water but dissolves in oils and fats, alcohol, acetone, and ether. In the original investigations N-ethyl-o-crotono-toluidide proved to be relatively nontoxic and nonirritating to rabbits, guinea pigs, rats, and mice, with similar results later in man.

The scabicidal action of N-ethyl-o-crotono-toluidide was demonstrated by its lethal action in concentrations of 5 and 10 per cent on *Psoroptes cuniculi* within 10 minutes after exposure, while a 2 per cent concentration killed this organism in 10 to 30 minutes. Comparative studies with other scabicides, including benzyl benzoate, showed N-ethyl-o-crotono-toluidide to be superior to these in its lethal action on *Psoroptes cuniculi*. Studies on the bacteriostatic effect of this substance on staphylococci and streptococci shows it to be definitely inhibitory to the growth of these microorganisms, but not to E. coli.

In the clinical study reported by Couperus, 70 cases of scabies were treated with a 10 per cent ointment of N-ethyl-o-crotono-toluidide with a 100 per cent cure rate. Three cases required more than the two routine applications before all clinical evidence of the disease had disappeared. There were no local or systemic reactions.

In the course of the investigation on the scabicidal action of N-ethyl-o-crotono-toluidide it was noticed that

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many of the patients who were treated remarked about the immediate cessation of their itching when the ointment was applied. On this basis, a second series of 124 cases was treated with the same preparation for the relief of pruritus in a variety of dermatoses. The larger number of cases comprised neurodermatitis, pruritus ani et vulvae, and dermatitis venenata. Complete relief, lasting usually 6 to 8 hours, was obtained by 66.2 per cent of cases, considerable relief by 27.4 per cent of cases, while 6.4 per cent of cases found little or no relief.

Estradiol Potency by Weight

The Food and Drug Administration has announced that estrogenic hormone preparations, when fabricated in whole or in part from α-estradiol, should indicate the content of the α-estradiol in terms of weight. The Administration states that the declaration of the potency of α-estradiol in terms of international units of estrone activity is misleading since there is no international unit for measuring activity of α-estradiol and no accepted relationship between its activity and that of estrone either in test animals or in humans. Details are found in the Federal Register, Vol. 14, No. 165.

Chloramphenicol for Herpes Zoster

In the *Southern Medical Journal* (42:-696, 1949), L. M. Dawson and H. E. Simon point out that clinically, herpes zoster is characterized by pain along the course of a nerve, occasionally mild, but often severe. It is usually followed in one to four days by the appearance of vesicles which are distributed along one or more nerve segments. The course of the disease is from 2 to 6 weeks, the lesions heal slowly and the pain is often severe and persistent. Not infrequently there is a postherpetic neuritis which may be disabling for months. In older and debilitated patients the condition may be extremely severe and even fatal. Treatment has been varied and relatively ineffective. However, since herpes zoster is caused by a virus, these investigators decided that chloramphenicol (Chloromycetin) might be of value as a therapeutic agent. Four patients in the acute stage of herpes zoster were given chloramphenicol orally in doses of 250 mg. every four hours for 24 doses. In every instance there was definite improvement after 24 hours and after 48 hours disappearance of the pain and marked regression of the skin lesions. All progressed rapidly to complete recovery without remission or residual neuritic pain. There was no evidence of intolerance to the drug. It is noted that although the number of patients treated is small, the dramatic recovery in each instance indicates a high degree of specificity of the drug in the treatment of the condition.

They also report that two patients with severe postneuritic pains were given chloramphenicol in the same dose. No improvement resulted. Actual scarring and nerve damage, continued dependence on drugs for relief of pain and psychic and nutritional factors are so often complications in these patients that improvement was not expected.

Oral Aureomycin for Urinary Infections

Because of the pain caused by intramuscular injections, A. M. Rutenburg and F. B. Schweinburg (*New England J. Med.* 241:698, 1949) decided to try the oral route for administering aureomycin. They found that in 26 patients with a variety of urinary infections, due chiefly to gram-negative bacilli, aureomycin was as effective by oral as by intramuscular administration. Clinical improvement occurred in all cases. Bacteriologically, 19 patients, of whom 12 had failed to respond to other antibiotics and 13 had complicating disease in the urinary tract, were cured, 16 by a single course and 3 by repeated courses of therapy. *Pseudomonas aeruginosa* was the least susceptible of the bacteria encountered. Bacterial resistance did not develop.

Antihistaminics for Nausea and Vomiting of Pregnancy

The treatment of nausea and vomiting of pregnancy still constitutes a major problem in antenatal care. It is well recognized that spontaneous relief of symptoms may be expected by the end of the first trimester of pregnancy, and the majority of patients resign themselves to awaiting this happy outcome. Most cases are of mild degree and do not appear to require any special treatment. When treatment is necessary simple dietary measures usually suffice to give adequate relief. In many cases, however, despite such treatment, the annoying symptoms persist and render life miserable even if they do not constitute a potential danger to it. Such being the case, there is a need for a simple and safe method of treatment which will relieve the symptoms in those patients who do not find dietary measures sufficient.

The results of investigations by T. Dougray (*Brit. Med. J.* 2:1081, 1949) on the use of antihistaminic drugs in this condition suggest that these agents may offer just such a form of therapy. In his clinical studies, 94 women were treated with antihistaminic drugs. In 78 of these cases (83 per cent), complete cures followed the use of these drugs, 4 (4 per cent) showed improvement and 12 (13 per cent) were failures. Dougray points out that the majority of patients who received treatment with these drugs had already been treated along the usual lines, and, even allowing for the fact that some of these patients could have expected eventual relief without further treatment, it is difficult not to be impressed with the results obtained. At any rate, the success of this method has made it desirable to carry the investigation further with a series of patients treated in various other ways.

Tetraethylammonium Chloride in Vascular Diseases

Following a review of the pharmacology of tetraethylammonium chloride, J. L. Eisaman and J. Chrispin (*Indiana State Med. Assoc. J.* 4:517, 1949) describe the effects of this drug in over 100 patients with peripheral vascular diseases. In their opinion the ability of tetraethylammonium chloride to relieve symptomatically the effects of circulatory insufficiency is remarkable. Rest pain from thromboangiitis obliterans (Buerger's disease), claudication pain from thromboangiitis or arteriosclerosis obliterans and causalgic pain, including the pain and swelling of reflex sympathetic dystrophies and osteoporosis due to trauma, may be relieved. It is helpful in cases in which the use of tobacco is stopped on account of thromboangiitis obliterans. The drug is a useful substitute for lumbar paravertebral sympathetic block in cases of mild thrombophlebitis. The drug has been used in several cases of hypertension with great reduction in systolic and diastolic pressures. This compound may be of some value in determining the suitability for sympathectomy of patients with hypertension. In a few cases the drug did not lower the blood pressure. However, even in those hypertensive patients in whom blood pressure is not lowered, relief of headaches and associated symptoms is usually obtained. In one patient in whom two ophthalmologists had assumed that eyesight was lost, vision was restored by daily injections of tetraethylammonium chloride. They stress that the patient must remain recumbent for at least thirty minutes after intravenous injection of the drug.

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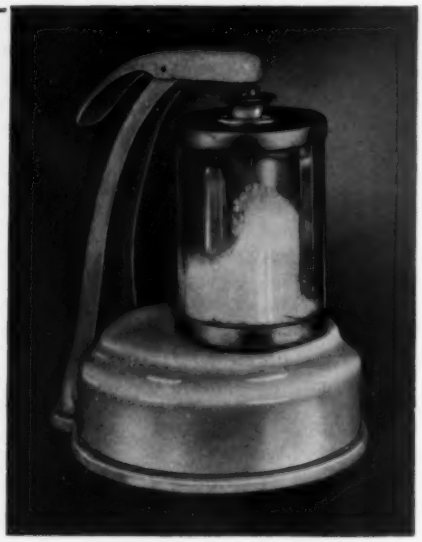

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READERS' QUESTIONS

HAIR DYE REMOVERS: Can you please give me a formula for making a preparation that will remove dyes and other coloring agents from the hair? Long Beach.

Perhaps I can best answer your inquiry by quoting the following paragraph from Jannaway's text on hairdressing preparations:

"Hair dye removers are extremely difficult to formulate and often dangerous to handle. Dyes them selves vary so widely that no one product will be successful in removing every type of dye. Much must be left to the experienced and competent hairdresser, who will know how and when to apply acid solutions, peroxides and sulphites, etc. By far the safest practice is to cut the badly dyed hair when it has had time to grow out."

LIQUID HAND CREAM: One of our clients has asked your assistance with respect to a hand cream similar to those sold on the American market. They point that they require a formula for a hand cream in liquid form and that they would appreciate manufacturing instructions. New York.

A non-sticky greaseless type of hand cream or lotion, which will meet your requirements can be made from:

Glyceryl monostearate	**3.5 parts**
Stearic acid	**2.5 "**
Glycerine	**5.0 "**
Alcohol S.D.	**5.0 "**
Triethanolamine	**1.0 "**
Water	**83.0 "**
Preservative and perfume	**sufficient**

Melt and bring to 90°C. the glyceryl monostearate, stearic acid and glycerine and 50 parts of the water. Stir well. Dissolve preservative and perfume in the alcohol. Place the remainder of the water and the triethanolamine in another kettle and bring to the same temperature. Then add slowly and in a thin stream to the first mixture, stirring constantly. When cool, add the alcoholic solution and stir again. Set aside overnight and stir briefly the next day. Strain and bottle.

COLD CREAM: We have been having difficulty with the manufacture of cold cream and our difficulty has been that water separates out. Can you give us a formula that will yield a satisfactory product? Boston.

Perhaps the best known procedure for making a good cold cream is given in the U. S. Pharmacopoeia under the title, Rose Water Ointment. It is probably one of the best cold creams available. If you wish further information, I would suggest that you read Thomssen's "Modern Cosmetics," or De Navarre's "The Chemistry and Manufacture of Cosmetics," both of which are available from our book department.

LIQUID DENTIFRICE: About a year or so ago you published a formula for a liquid dentifrice with a new type of thickening agent. Could you kindly send us this formula or one similar to it? Harrisburg.

A liquid dentifrice with sodium alginate as the thickening agent was cited in our January, 1948 issue as follows:

Sodium alginate	**4.0**	**Gm.**
Distilled water	**200.0**	**cc.**
Allow this combination to stand overnight and add:		
Saccharine, soluble	**0.25**	**Gm.**
Distilled water	**20.00**	**cc.**
To the combination, now add:		
Flavor	**8.0**	**cc.**
Alcohol	**100.0**	**cc.**
Glycerine	**40.0**	**cc.**
The combination is then mixed and added to:		
Sodium lauryl sulfate	**20.0**	**Gm.**
Distilled water	**150.0**	**cc.**
Finally add:		
Amaranth solution (5%)	**1.0**	**cc.**
Distilled water, to make	**500.0**	**cc.**

WAVE SET PREPARATIONS: I am interested in a good formula for a liquid hair fixative and also a fixative jelly for the hair. Will you advise me? Guatemala City.

I am not quite sure as to what you mean, but I am working on the assumption that you mean liquid hair wave-set and a curling jelly for the same purpose. A liquid hair wave-set can be made from:

Gum tragacanth ribbons	**12 oz.**
Warm water	**9 gals.**
Alcohol	**1 gal.**
Perfume	**4 oz.**
Soda benzoate	**1 oz.**

Dissolve soda benzoate in the warm water and add gum tragacanth. Allow to stand overnight (mixing whenever an opportunity is presented). Then force gently through cheesecloth in order to eliminate the lumps. Mix perfume odor and alcohol together and add to tragacanth solution; mix and add color. This product can be thinned or thickened by adding or reducing the water.

A jelly type product can be made from the following:

Gum tragacanth	**4.00 per cent**
Glycerine	**4.60 " "**
Alcohol	**10.50 " "**
Formaldehyde	**0.15 " "**
Boric acid	**0.10 " "**
Water	**80.40 " "**
Perfume	**0.25 " "**

Make the tragacanth mucilage as above, add the glycerine and perfume formaldehyde and the remainder of the alcohol last.

Perfumer's Shelf

More Data on Synthetic Floral Perfumes

In the second part of his discussion on the compounding of synthetic floral perfumes, T. Ruemele (*Perf. & Essent. Oil Rec.* 40:324, 1949) starts with a consideration of lilac perfume. He notes that hydroxycitronellal is a valuable compound for floral compositions and simultaneously for the lilac type. The combination hydroxycitronellal-phenylethyl acetal helps to suggest the note of the lilac. Suitable fixation will obviously be obtained with these compounds, but amyl cinnamic aldehyde, civet, indol, musk, storax, or patchouli oil (in very small proportions) could be used instead. A lilac perfume may have the following components:

Terpineol	400
Phenylethylalcohol	100
Heliotropin	50
3-Methyl-2-(n-hexene-3-(yl))-cyclo pentene	50
Anisic aldehyde	50
Hydroxycitronellal	100
Eugenol	10
Benzyl acetate	120
Linalol	20
Benzyl benzoate	100

In discussing lily of the valley perfume Ruemele notes that hydroxycitronellal and the corresponding acetal are often present in this type of perfume, and preferably 20 per cent is used when the acetal is to be incorporated. Best matches are, however, farnesol or linalol *ex* rosewood oil. Actually it is quite impossible to imagine a lily of the valley perfume without containing hydroxycitronellal. Fixatives are citronellol, rhodinol, *alpha*-ionone, benzyl salicylate, higher fatty aldehydes (in traces), neryl propianate, phenylethylalcohol esters, etc. Lilly of the valley perfumes can include the following ingredients:

Hydroxycitronellal	220
Linalol	50
Aubepine	40
Terpineol	60
Rhodinol	50
Heliotropin	60
Vanillin	30
Ylang-ylang oil	30
Musk ambrette	50
alpha-Ionone	60
Muguet base	350

With respect to clove perfume, he states that an attractively fragrant synthetic clove bouquet composition can contain the following:

***Iso*eugenol**	18
Ylang-ylang oil	3
Neroli oil	1
Terpineol	9
Eugenol	22
Heliotropin	4
Vanillin	1
***alpha*-Cresyl *alpha*-methyl glycerine ether**	20

Concerning jasmin perfumes, Ruemele observes that the use of certain components for providing jasmin shading is an essential in such a composition. For instance, indol, which closely approaches the jasmin odor, may be used in perfumes and lotions, since no discoloration would occur. However, the reverse is true when indol is used in perfumes which will eventually be incorporated in creams and powders. Similarly methyl anthranilate has rather a restricted use in this connection. Amyl cinnamic aldehyde enhances the floral character of jasmin, and benzyl acetate, linalol, linalyl acetate and benzyl mono chloride acetate represent very important constituents of the composition. Ylang-ylang oil should be present, since it imparts the desired note to the fragrance. Musk ketone, Tolu balsam, heliotropin, cinnamic aldehyde, phenylpropyl alcohol, phenylacetaldehyde and acetals, hydroxycitronellal, benzyl salicylate, l-citronellol, rhodinol, civet and ylang-ylang oil are the fixatives.

Basic substances for mimosa perfume include hydroxycitronellal (and condensation compounds), anisic alcohol, terpineol, anisic aldehyde, linalol, ionones, *para*-methyl acetophenone, acetophenone, dimethyl acetophenone, methyl salicylate, benzophenone. The bouquet is preferably blended with nerol compounds and rose compositions also with dimethyl octanol, etc. Cinnamic alcohol, musks, civet, coumarin, heliotropin, vanillin, Tolu balsam, benzophenone, methylnaphthyl ketone are effective fixing agents for this type of perfume.

Regarding the production of heliotrope perfume, Ruemele is of the opinion that it is quite impossible to match the heliotrope fragrance with heliotropin alone, and several other additions are necessary in order to obtain a satisfactory product. It should be emphasized that heliotropin is not identical with heliotrope in an olfactory respect, but merely suggests the odor of the latter. When heliotropin is not purified a note of safrol is introduced. The perfumer generally uses heliotropin, and ensures intensity to the composition by the addition of vanillin, anisic aldehyde, Peru balsam, cinnamic aldehyde, ylang-ylang oil, benzylated cinnamic acid, benzaldehyde. An interesting bloom-like note can be imparted by carefully regulated dosages of phenylethylalcohol, jasmin and rose or ylang-ylang. Phenylacetaldehyde or the corresponding acetal or tolyl acetaldehyde concentrates enhances the fresh and natural floral odor. Tolu balsam absolute confers a soft shade to the whole composition. The mild and sweetish odor of piperonylidene diacetate produces a peculiar finished heliotrope-like effect and fixes the composition simultaneously. Unfortunately this compound is rather unstable in an olfactory respect. Fixatives for heliotrope perfumes are benzyl cinnamate, cinnamic alcohol, storax, civet, musk, labdanum, etc.

Finally, in considering lavender perfume, this authority observes that linalyl acetate represents the characteristic olfactory component of the lavender oils. Linalyl *iso*-butyrate and terpenyl propionate are eminently suitable for lavender bouquet compositions. It should be remembered that lavender perfumes do not retain their fragrance in cosmetics for long periods unless fixing agents are incorporated. Benzoin, styrax, Peru balsam can contribute to promote the desired stability. A suitable finish is given by bois de rose oil, musk ketone and coumarin. Small additions of geranium oil, clove oil, bergamot oil, petitgrain oil, sage oil, etc., will help to shade the composition, and oak moss extract is a further valuable addition.

Aromatized Paper

According to a note in *Science News Letter* for November 19, 1949 vanillin, ethavan and coumarin, all long used to

enhance the aromas of food, are now used to add a fragrant odor to paper to be used to wrap candy, cookies and ice cream.

Indian Vetivert Oil

According to K. Narain, S. Goswami and P. N. Das Gupta (*Indian Soap J.* 14:303, 1949), Moosnagar and Bharatpur vetivert oil have the best aroma of the various Indian vetivert oils. These oils possess high specific gravity and have a high ester content of between 27 and 30 per cent and a free alcohol content in the region of 65 per cent. Though Sitapur and Karialaghat oils contain a high percentage of alcohols 65-70 per cent) they have only a low ester content (11-19 per cent). Thus it is seen that the best vetivert oils are those which contain high proportions of both esters and free alcohols. According to these workers a genuine Indian vetivert oil should conform to the following specification:

Specific gravity at 15°C.	**0.9901-1.0486**
Optical rotation	**−30-65°**
Refractive index at 20°C.	**1.5158-1.5260**
Acid value	**2.2-12.0**
Ester value	**25-60**
Acetyl value	**132-166**
Solubility in 80% alcohol	**1-2 vols.**

Extracting Citrus Oils

According to information provided by M. Poller in British Patent 582,653, the essential oils of citrus peel are obtained by subjecting the disintegrated peel mixed with a grinding powder, such as sand, to high pressure in a hydraulic press, passing the expressed liquor through a filter press, and finally separating the filtered liquor in a centrifuge into its components of essential oils and sugary liquid. The latter may be used for washing the residue retained in the hydraulic press which is transferred to an open vessel having a perforated bottom and the sugary liquid preferably sprayed thereon. The grinding powder and any remaining essential oils are removed by the sugary liquid and the residue simultaneously enriched thereby. This residue after drying may be utilized as cattle fodder.

The remnant of essential oils may be recovered from the sugary wash liquor by separating the grinding powder by sedimentation and then passing the liquor through a second filter press to a centrifuge for separating the remnant of essential oils therefrom. The sugary liquor may be used for fermentation processes.

Costus Oil

Costus oil is little known and rarely used, since only perfumers of wide experience are capable of exploiting its unique odor, reminiscent of elecampane and orris, which blends harmoniously with perfumes having an animal background. The oil also possesses remarkable fixative properties and although it is used only in small proportions, its presence excites admirable olfactive reactions. In an article on the production, characteristics and chemistry of costus oil, Y.-R. Naves (*Manuf. Chem. & Manuf. Perf.* 20:318, 1949) points out that costus oil is extracted from the root of the costus, a plant used since ancient day at a medicinal agent and as an insect repellent. Widely employed in the Far and Near East, the root is harvested on the mountain slopes and in the valleys of Kashmir and Sikkim. The essential oil is obtained from the powdered root by distillation. As in the isolation of all essential oils rich in actones, this is a delicate operation: the yield is affected by the nature of the metal of the still, by the size of the batch, and by the structure of the swan neck and the cooling coil. The distillate is generally extracted with benzene or toluene, and the yield ranges from 0.6 to 2.8 per cent. A costus oil can also be obtained by treating the resinoid with a current of superheated steam under reduced pressure, or by simple distillation in high vacuum. These too are delicate operations, and the yield ranges from 3.3 to 4.8 per cent. This is conconsiderably better than the yield from the roots by direct distillation, and gives more lactonic products.

The characteristics of the essential oil obtained by direct distillation from the roots have been determined by Naves, as follows:

Density at 15°	**0.9985-1.043**
Rotary power (D)	**+12.20°-+18.54°**
Refractive index at 20°	**1.5120-1.5230**
Acid value	**18.0-33.0**
Ester value	**86.2-126.6**

The composition of costus oil has been studied, principally by Semmler and Feldstein some 30 years ago, three groups of components having been recognized: *a.* Terpenes—a phellandrene, camphene, and an alcohol $C_{10}H_{18}O$, constituting in all 1 percent of the oil. *b.* The aliphatic hydrocarbon—aplotaxene, $C_{17}H_{28}$ (20 per cent of the oil). *c.* Sesquiterpene constituents representing 60 per cent of the total oil, *i.e.* Two sesquiterpenes—α-costene and β-costene. In addition there is a bicyclic acid-costic acid; an alcohol—the costol, and two lactones—costus lactone and the dihydro sesquiterpenic body, dihydro costus lactone.

Essential Oil of Zdravets

According to Y. R. Naves (*Perf. & Essent. Oil Rec.* 40:161, 1949) there seems to be a renewed interest in the essential oil of zdravets, obtained from the herbacious parts of *Geranium macrorhizum* L. Essential oils of zdravets appeared on the market about twenty years ago. It has been stated that both before and since that time the distilled essence has been used as an adulterant in Bulgarian otto of roses. Naves has examined various batches of oil of zdravets of Bulgarian origin. All these batches were peculiar for their semi-solid appearance. They consisted of compact masses of large yellowish, translucid crystals in a viscous liquid of an olive green color. Data with respect to the crude distilled oil are as follows:

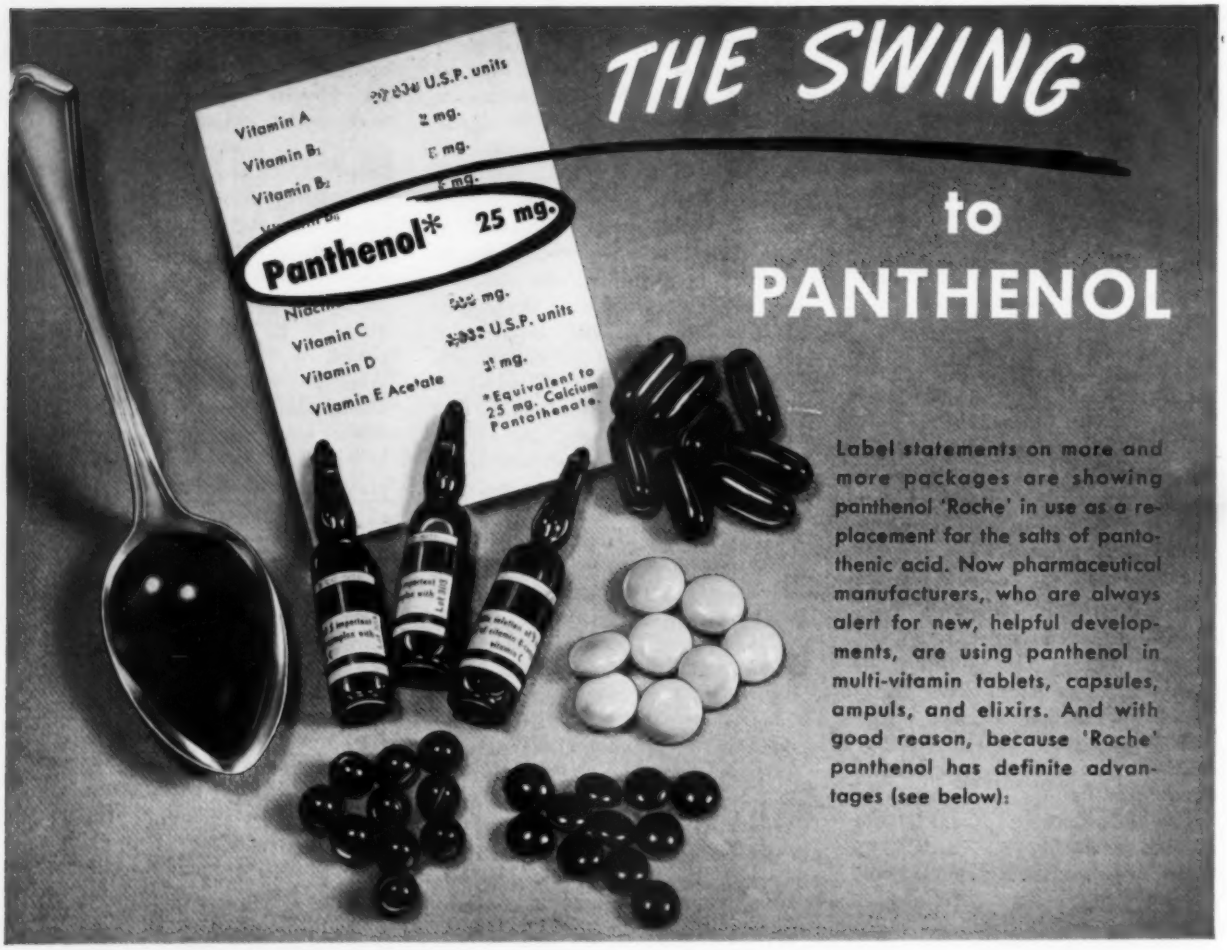
Specific gravity	**0.943 to 0.959**
Refractive index	**1.5058 to 1.5132**
Optical rotation	**−2° to −8°**
Acid number	**1.12 to 1.40**
Ester number	**4.2 to 15.6**
Ester number after cold formylation	**34.6 to 63.0**
Melting point	**35° to 42°**

The solid element, germacrol, which gives the distilled oil of zdravets its characteristic appearance is a sesquiterpene oxide, $C_{15}H_{22}O$.

Naves reports that the production of the oil has been going on in Cyprus since 1947. The production of the concrete oil and absolute oil was scheduled for about October, 1949.

This Cyprus oil is characterized by its liquid and slightly viscous appearance. At no time, no matter what the season may be, has there been noticed during distillation any formation of crystallizable fractions due to the presence of germacrol. The color of the oil, olive green, is very close to that of the Balkan variety, but the odor is menthonic and very rose-like, and resembles closely that of geranium oils (*Pelargonium* spec.). Its constants have been determined, as follows:

Specific gravity	**0.8982**
Refractive index	**1.4710**
Specific rotation	**14.30°**
Acid number	**11.4**
Ester number	**70.0**
Carbonyl index	**103.4**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Abreast of the Markets

Essential Oils Are Very Active, Botanicals Quiet, As 1949 Ends; Tartrates and Theobromine Reduced

A somewhat paradoxical situation developed last month with the display of great activity in the essential oil field as contrasted with an almost-idle botanical market. Several reductions occurred in chemical prices, among them, tartrates and theobromine. The essential-oil enigma has been attributed to a number of factors which apparently spurred the market into action during the year-end period when it is usually seasonably quiet and customary to maintain minimal inventories. Europe is importing heavily, say some sources of information, and the Sterling area is continuing to elevate the prices of their export items in order to attract as many dollars to the area as possible. Other sources believe essential-oil prices since the war have been too low and are only now becoming properly adjusted—a situation which developed during the war years because the United States was the only major importer.

The botanical situation, seasonably quiet, is marked by the increasing number of scarce items, either because of Iron-Curtain origin, or difficulty in harvesting (culvers root, ephedra vulgaris, rhatany root, and rhubarb root).

Tartrates Reduced

Domestic manufacturers have reduced tartrates by as much as 3c a pound. Tartaric acid, for example, is selling for 31½c a pound in 10,000-pound barrels, 32c in 230-pound drums, 33c in 100-pound drums, and 35c in 50-pound drums. Potassium bitartrate NF VIII powder has been established at 28c for a 250-pound drum, 29c for a 100-pound drum, and 31c for a 50-pound drum. This reduction in tartrate prices is said to have occurred as a result of low-cost foreign material entering the market. The impending possibility of an even greater competitive situation caused by the rush of foreign producers for the American dollar may also have affected the condition.

Rochelle salt has been reduced by one cent per pound, resulting in new quotations of 28c for the powder in barrels and 27½c for 5,000-pound barrels.

Theobromine and Salts Down 50c

Theobromine and its salts were reduced by 50c, theobromine alkaloid now being priced at $4.50 a pound for a 100-pound drum and $4.55 for a 25-pound drum. Among the theobromine salts, theobromine salicylate has been set at $4.05 for a 25-pound drum, while theobromine and sodium acetate USP XIII is $3.50 a pound for a 100-pound drum and $3.85 for a 25-pound drum ($3.65 a pound for 500-pound lots). Theobromine and sodium salicylate NF VIII is quoted at $2.95 a pound for a 100-pound drum ($2.90 for 500-pound lots) and $3.10 for a 250-pound drum.

Eastern Oils Advance Again

Anise oil, $1.20 to $1.30 in December continued its advance and is now $1.25, Caraway is 50c more, selling for $4.50 on the inside price and $4.75 at the upper range. Pine needle, of Russian origin, jumped 75c during December to the $4.75 mark. Practically no cassia or anise have been offered from the origin in recent weeks, and, although lavender oil has not changed in price yet, an upward change is expected soon, owing to a diminishing supply.

Anise Derivatives in Demand

The increasing inaccessibility of anise oil loomed sharply during the latter part of December as anti-histaminic manufacturers ordered large quantities (over 10,000 pounds) of anisic aldehyde. The aldehyde is made from anethol, which itself is a derivative of anise. Synthesis of anisic aldehyde on the commercial plane may be in the offing, should the anti-histaminic demand continue and should the difficult Chinese political situation continue, as will probably be the case for some time.

Camphor Lowest in 9 Years

Prices on powdered camphor, U.S.P. were cut by 8c a pound last month, a move which brought the price of the material down to the lowest point since 1939. The 2,000-pound lot is selling for 45c, while the 1,000 and 100-pound lots are 46c and 47c a pound, respectively. This reduction has been attributed to the fact that Formosan natural camphor was recently lowered in price.

• Prices quoted in this section were current on the first of this month.

Quicksilver Displays Soft Tone

Recent arrivals to this country of quicksilver from Yugoslavia have tended to soften the market and increase the total amount of imported material to a figure in excess of the 100,000 flasks which members of the trade had predicted for this year. At the same time it has been indicated that a slight increase in actual consumption of the metal may be in the offing, a development which might possibly mean a turning point in the market, which has been declining rather steadily in recent years.

Current world production of the metal has not yet reached the top figure of the war years (275,000 flasks in 1941) when this country was building up a sizable stockpile, and at a time when war materials demanded the use of huge quantities of mercury in their manufacture. During the post-war years production of the metal has leveled off. Having replenished its stockpile, the government has departed from the market, and numerous mines have closed down to await more favorable conditions.

Although figures of total production of quicksilver are not available, individual sources of supply indicate that the leveling off began in 1948. In Italy, for example, the yield of mercury in 1947 was 53,984 flasks, while in the following year, it fell to 39,000 flasks, or 72 per cent less. A similar trend appeared in Mexico, whose exports for the year 1947 were 428 tons (3,627,488 pesos) as compared with 165 tons (1,352,920 pesos) in 1948.

Italian production of quicksilver has increased from a yearly average of 14,992 metric tons (1891-1895) to the total of 103,952 tons in 1948. Production figures of the major sources, aside from that of Italy, for the year 1948 are as follows: United States, 14,388 flasks; Czechoslovakia, 800 flasks; Canada, 359 flasks; and Chile, 290 flasks. The

(Continued on page 94)

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Lanolin Production Sluggish; No Activity Expected Through March; Importers Await Menthol Shipments

The supply of lanolin is very closely adjusted to the demand at present, and appears to be in a delicate balance, according to a source in the trade. Scouring operations of raw wool, this spokesman indicated, began to ease off in early December and may not resume full activity through the first quarter of 1950. Domestic woolen manufacturers at the same time slackened operations as the inventory period approached at the end of December and early January. Moreover, manufacturers hesitated to buy large supplies of wool, although the heavy buying season for woolen goods (October to March) was apparently at hand. Manufacturers were hesitant because the price of raw wool had soared to approximately $2.50 a pound in contrast to the 11c a pound which existed in 1932. Instead, they have established the practice of purchasing smaller shipments of the raw wool at frequent intervals in order to avert financial loss, should an abrupt price change occur.

Another condition which would seem to substantiate the belief that scouring operations have fallen off is the fact that the United States government has completed its stockpiling of woolgrease (source of lanolin), and has ceased ordering huge quantities. Yet, the blocking of this large channel of woolgrease sales has not disturbed the equilibrium of the market. Medicinal woolgrease imports from Great Britain, Australia, and Canada have measurably fallen off since 1945 (70,244 pounds) and 1946 (194,241 pounds), indicating that the domestic sources capably met the demand up to 1949 and recent months. In 1947, for example, this country imported only 12,905 pounds, and in 1948, 3,692 pounds.

The first four months of 1949, the United States received no imports at all in the medicinal woolgrease, indicating a state of self-sufficiency. In May the effects of the woolen mills shutting down were immediately reflected in the import figure of 14,493 pounds, which increased to 38,050 in June, and 82,821 pounds in July. Import figures for the balance of 1949 are not yet available, although domestic production of woolgrease, as indicated, has been partially restored.

Although there are large quantities of raw wool in storage, it is neither practicable nor possible to separate the woolgrease from the wool before the material is ordered by the mills. Should the wool and the woolgrease be stored separately by the manufacturer the wool would become brittle and useless, since the grease is Nature's means of protecting the wool. The production of lanolin is, therefore, indirectly contingent on the demands of woolen mills for the raw wool.

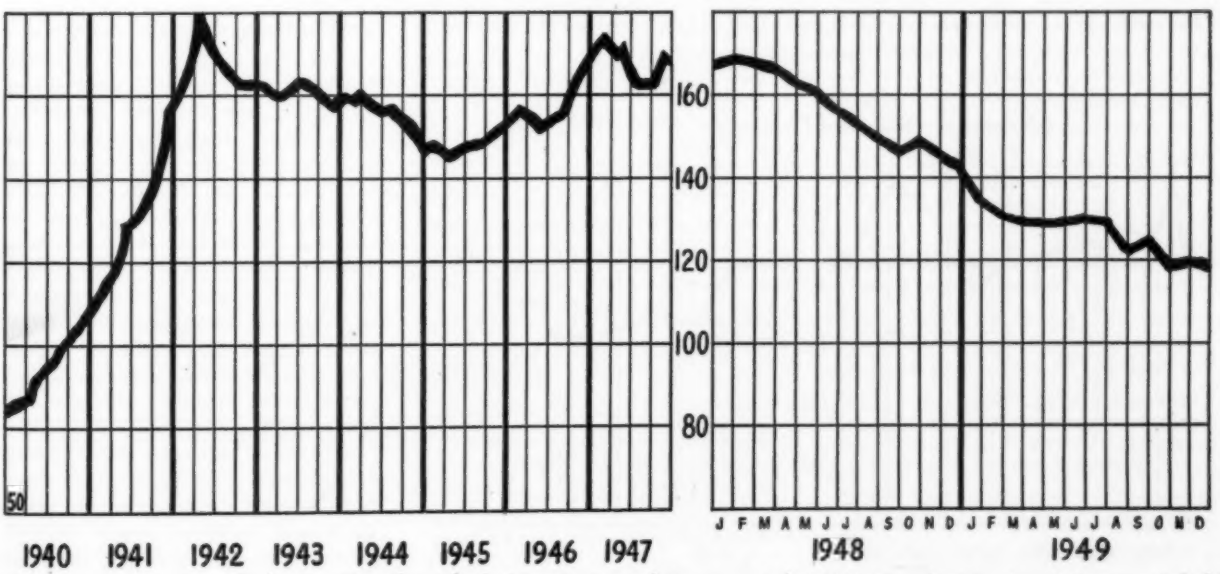
One spokesman in the trade declares that the Western blizzards of 1949 which killed an inordinately large number of sheep, cut the production of wool and woolgrease in the United States by as much as 40 per cent, and that this deficiency has not been replaced. The production in 1950, he avers, will be only 60 per cent of the normal. Another source of information has declared last year's winter loss of sheep has not affected the woolen and lanolin industries. He explains that the domestic supply of wool, while it may be large in itself, is nevertheless a small portion of the world supply.

Menthol Shipments Expected

Menthol advanced 15c during December, from $10.75 for Brazilian to $10.90, and from $11.00 for the Chinese material to $11.25. The price of the Brazilian is expected to fall early this year, according to one source, since the 1950 crop of peppermint oil is now being collected —and will be collected through March. Supply of menthol at the present time is tight because arrivals from South America have been light as of this month, and because stocks on hand are small. A small shipment (between 100 and 200 cases) of menthol from China, recently reported as lost and now said to be awaiting shipment, may help alleviate the condition.

Two factors point to a probable easing of the menthol picture. Europe is not buying as much menthol now as last year, and so the over-all demand for the commodity has reduced. Great

50 Raw Materials—Weighted Price Index. 1926 = 100.



The price index of fifty commodities for December declined from 119.0 to 117.8.

DECEMBER PRICE CHANGES

UP

Anise seed star 1c
Anise U.S.P. 5c
Balsam Peru 10c
Bergamot 20c
Bois de rose 25c
Cardamon oil $11.00
Citral 15c
Ephedra vulgaris 2c
Geranium oil, Bourbon $1.00
Hellebore root, white 10c
Horehound root 2c
Menthol, natural 15c
Patchouli oil $4.00
Peppermint oil, natural 40c
Peppermint oil, redist. 50c
Pimento leaf oil 20c
Pine needle oil 20c
Sassafrass oil, artificial 20c
Soap bark, whole 1c
Spearmint oil 15c
Wormseed oil 20c

DOWN

Acetylsalicylic acid 2c
Agar agar No. 1, 25c
Angostura bark 2c
Balsam copaiba para 5c
Balsam copaiba, So. Amer. USP 2c
Buchu leaves 2c
Cream of tartar 5c
Lycopodium 25c
Mastic gum 10c
Rochelle salt 1c
Sandalwood oil $1.15
Tartaric acid 3½c
Theobromine 50c

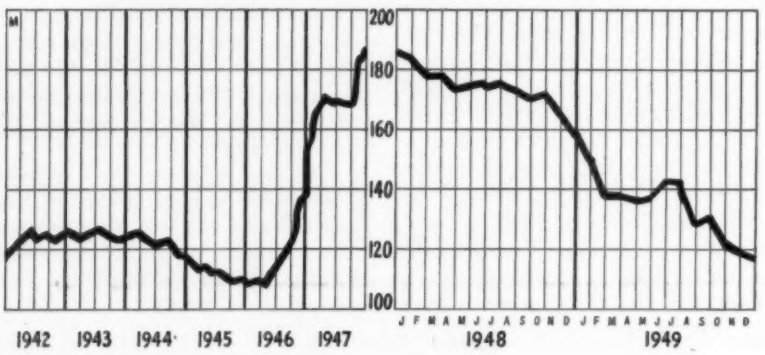
Britain, too, has trimmed its menthol budget. Before England devalued the pound on September 18, 1949, England had been buying up extremely large stocks of menthol and was, in fact, paying more for the item in Brazil itself, than buyers were paying on spot in New York. Directly after the currency readjustment, British buying tapered off rapidly.

Quicksilver

(Continued from page 91)

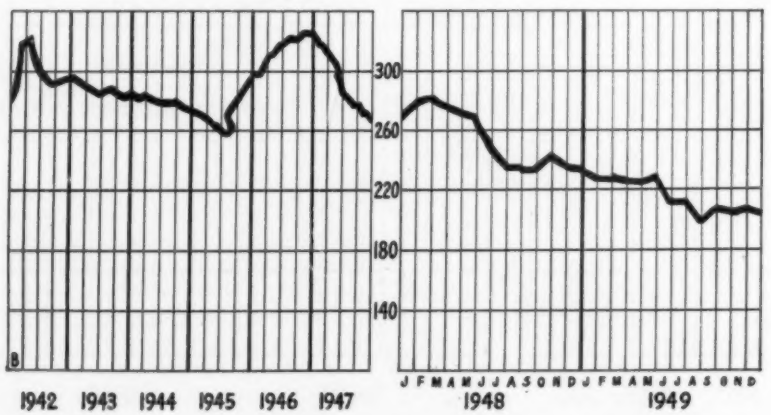
production of Yugoslavia for the years from 1946 through 1948 has not been made available yet, since the Idria Mine (formerly owned by Italy) was ceded to Yugoslavia at the termination of World War II, and accounts have not been reported so far.

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100.



The medicinal chemicals index declined from 119.5 to 117.3. Cream of tartar went down; menthol advanced.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index declined from 208.7 to 205.4. Agar and buchu were lower.

Cod Liver Oil Remains Stable

Following several downward changes during 1949, cod liver oil has become established on a lower level at $41 for a 30-gallon drum since November. There is substantial oil on hand in the producing countries (Iceland, England, and Norway), which may be used in one or more ways, depending on the amount of old stock left when the fishermen return with the 1950 yield. If a surplus in the oil persists and the current season provides a large yield, the old stock may well be utilized in producing fats, in order to keep the oil supply down and the market strong. If there is a correspondingly large production of whale oil, also used in the margarine and fat industry, cod liver oil supplies may of necessity be held back in order to prevent the market from weakening.

Horehound Herb Very Scarce

With the dwindling of horehound stocks, the price this month advanced 2c to the current range of 16c to 18c. The scarcity of the herb is undoubtedly due to its very nature and growing habits, since it is indigenous to the primitive and inaccessible areas of the world. The herb is gathered in backward areas of Spain and North Africa, for example, and is quite often stored without previous washing, until enough has been gathered to merit shipment to markets. On arriving in this country, the herb is checked by the Federal Drug Administration and more often than not must be reprocessed by importers before it is presentable to buyers. Inferior material is available, but good quality horehound herb is reportedly very scarce.

Vanilla Beans Continue Advance

Both the Bourbon and Mexican vanilla beans increased in price during the month, the Bourbon having advanced 50c to the current range from $4.25 to $4.75, the Mexican cuts, by $1.00 to the range from $5.25 to $5.50, and the Mexican whole beans by 50c to the range from $6.00 to $6.50. Virtually speaking, the Mexican beans hardly exist on the market at present, a condition which is not expected to improve until the new crop begins to appear some time in March. The increase in the Bourbon beans is attributed to three factors. The United States, and Europe have purchased more heavily since August, 1949, than in any comparable period during the last few years. (American importers bought 500,000 pounds during this period.) The price of the Bourbon beans was much too low, according to men in the trade, when

France declared an open market some months ago; these sources expect more advances this year. The third factor in the Bourbon situation is that the destruction of 1,000,000 pounds of beans in 1948 by the Madagascar government in order to strengthen the market is now being felt. Foreign holders of vanilla beans are aware of their strength in the vanilla market which has come into its own again.

Owing to dry weather during 1949, the new crop of Bourbon beans is not expected to be over 100,000 pounds.

Gums, Waxes Remain Steady

Slight changes occurred in the waxes and gums, as illustrated by ouricury which advanced 3c a pound and is now quoted from 78c to 79c. The outside price of arabic gum, powdered, U.S.P., increased 2c to the range of 18c to 22c. Ever since the British government stabilized the Arabic sorts market a number of weeks ago this commodity has been very stable, since all exporters are now required to sell the material at identical prices.

The 1949-1950 crop of carnauba wax is expected to be higher than the average. An extended rainy season postponed the first cutting from August to September, while a second cutting is taking place this month.

Peppermint Oil Continues Climb

Spot quotations in the oil advanced this month by 40c for the natural (now $5.50 to $5.65) and 50c for the redistilled oil, which prices range from $6.00 to $6.40. The concensus in the trade is that peppermint oil prices have been too low, judging from the fact that the farmer received an average of $6.20 per pound in 1948 and $4.87 per pound in 1949, or $1.33 less for each pound sold. The 1948 crop of peppermint oil amounted to 1,569,000 pounds, while the crop in 1949, according to a government report dated December 19, was 1,579,000 pounds, or 10,000 pounds larger. Although the 1948 crop was considered large, still there was no carry-over from that year to 1949, a factor which has been attributed to the relatively low price of the material and the corresponding large demand. It is believed that the market will continue to go up because the current export demands are increasing.

Other sources in the essential oil trade offer the opinion that higher peppermint-oil prices have been appearing because there is very little good-quality oil on hand. Now that the 1949 season has come to an end, these sources declare, it has been found that the average menthol-content of the peppermint oil is on the low side and that there is too little of the good quality (50 per cent menthol or over) on hand. The farmers, therefore, are trying to sell their low-content oil first, by demanding higher prices on the acceptable oil.

The value of the 1949 peppermint and spearmint crops was estimated at $9,373,000, considerably under the $13,175,000 value placed on the 1948 crops but still nearly 40 per cent greater than the ten-year average from 1938 to 1947 of $6,639,000, according to the Bureau of Agricultural Economics. Final 1949 figure for the two crops are tabulated below.

	Acreage	Yield per acre (lbs. of oil)	Production
Peppermint—			
Indiana	16,200	33	535,000
Michigan	9,500	21	200,000
Oregon	14,500	42	609,000
Washington	4,700	50	235,000
Total	44,900	35.2	1,579,000
Spearmint—			
Indiana	11,700	30	351,000
Michigan	6,000	30	130,000
Total	17,700	30	531,000

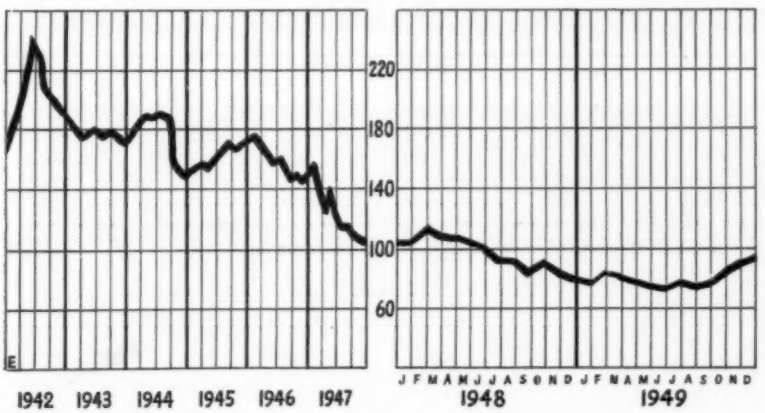
Sandalwood Oil Reduced

Sandalwood Oil has been reduced from $12.90 to $11.75, a development which has resulted from last year's currency devaluation. There has been talk that India plans to levy a 30 per cent tax on exports of certain commodities. The only known items up to this time to be included in the tax list are psyllium seed and husk, as well as such boat-load items as jute, hemp, rubber, tin, and pepper.

Look for Normal Geranium Crop

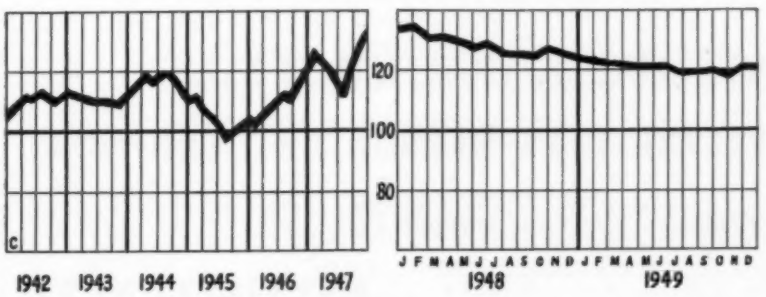
The Bourbon geranium oil advanced sharply during the month from $12.50 to $13.50. Some quarters attribute the higher price to the small crop which was gathered in 1949 and amounted to from 40 to 50 tons, in contrast to the 70-ton crop which is expected in 1950. Tornadoes, and other disturbances, it is said, affected last year's crop in January. Growers believe that if their crops can survive any storms which might occur in early 1950, their yield will reach the estimated 70-ton figure.

15 Essential Oils—Weighted Price Index. 1926 = 100.



The essential oils index advanced fractionally from 91.8 to 92.3. Sandalwood was lower. Anise, bergamot, bois de rose, and peppermint were higher.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index remained at 121.4. Copaiba was lower, balsam Peru and menthol advanced.

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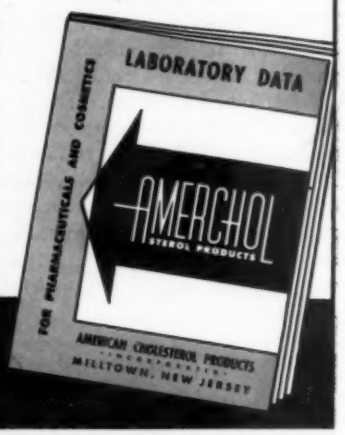

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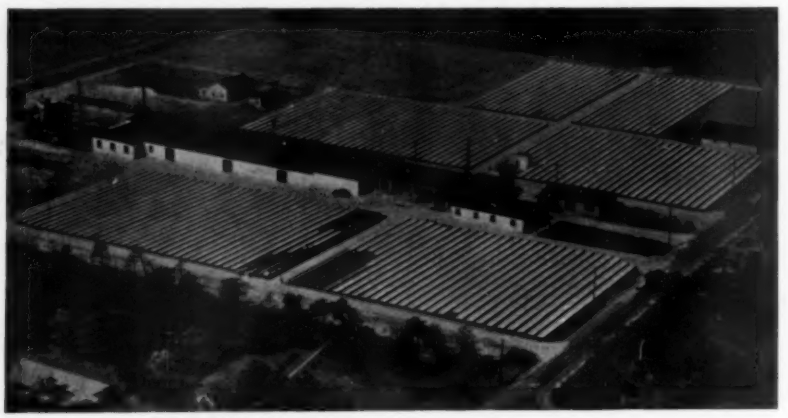

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Industry's Books

(Continued from page 75)

information which can be supplied by the bio-chemical laboratory; and no student or practitioner can be regarded as well equipped today who does not possess a knowledge of the circumstances in which a chemical examination may be of service, of the interpretation and significance to be placed upon the results of such an examination, and of the technique of obtaining the specimens to be sent to the laboratory for analysis. In order to appreciate the rationale of chemical pathology in its application to practical medicine, it would also be ideal for him to have a broad knowledge of how the various chemical analyses are carried out, and a detailed knowledge of the method of performing many of the simpler tests which do not require much time or equipment, and which may be performed, if he so wishes, in his own surgery or dispensary. This book has been written with a view to giving information on these points to the practitioner, house-physician, and senior student.

Streptomycin, Nature and Practical Applications, Edited by Selman A. Waksman, Ph.D., New Jersey Agricultural Experiment Station, Rutgers University, 618 pp., The Williams & Wilkins Co., Baltimore, $10.

Probably no other drug in the history of medical science has had such a phenomenal rise as streptomycin. The sulfa compounds and penicillin pointed the way to the possibilities of chemotherapeutic agents in combating bacterial infections, and abetted the awakened interest in the antibiotics. A substance was needed to combat gram-negative bacteria and the acid fast organisms, especially tuberculosis. Streptomycin appeared to fill the gap. The literature of streptomycin now comprises nearly 1500 references from many countries, evidence of the progress made in only a few years. The wealth of material made desirable a summary of the status of streptomycin at the present time. This Dr. Waksman and his associates present in this book. Emphasis is on clinical application with particular attention being given to the use of streptomycin in tuberculosis. The book also contains chapters on the uses of streptomycin in veterinary medicine and in agriculture.

Laboratory Manual for Principles and Processes of Pharmacy, by Henry M. Burlage, Ph.D., Dean and Professor of Pharmacy and Pharmaceutical Chemistry, College of Pharmacy, University of Texas, Joseph B. Burt, Ph.D., Dean and Professor of Pharmacy, College of Pharmacy University of Nebraska, and L. Wait Rising, Ph.D., Professor of Pharmacy, College of Pharmacy, University of Washington, Second Ed., 271 pp., Paper Cover, McGraw Hill Book Co., Inc., New York, $3.

In the practice of pharmacy skill and dexterity are needed as well as a knowledge and application of the basic sciences fundamental to a study of pharmacy. This work, therefore, includes experiments designed to acquaint the student with the skills, processes, and general information necessary for an understanding of the practice of pharmacy. Changes necessitated by the appearance of the thirteenth revision of Pharmacopoeia of the United States of America and the eighth edition of the National Formulary and the general acceptance of this manual as an accompanying guide to the text of the same name have made this second edition necessary and possible.

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Desirable G-I Tract Drugs

(*Continued from page 25*)

stop the acid from being secreted. Unfortunately, at the present time we do not have any drugs which are sufficiently potent in inhibiting gastric secretion to be of great usefulness. There is every reason to believe that the highly specific mechanism for the formation of acid in the pareital cell should be subject to highly specific inhibition. That is the reason that we are continuing to search for such a drug although we have already tested over 500 compounds and have not yet found a promising one.

Perhaps some remarks about our studies in this field may serve as guideposts to others who are interested in the problem. As a standard screening test we inject a small dose of histamine subcutaneously every ten minutes in dogs with pouches of the entire stomach. Within one to two hours this establishes a relatively constant rate of acid secretion. The drug being tested is then injected intravenously, the histamine injections being continued.

A wide variety of drugs have been tested by this method but the majority fall into one of several general classes.

Antihistaminics. Several hundred antihistaminics have been tested. These show essentially no inhibitory action. The slight activity shown by certain ones can be explained on the basis of either their weak atropine-like action or their pyrogenic effect when given intravenously in large doses. The conclusion seems justified that the currently available antihistaminics are unable to attach to and block the receptor site on the parietal cell. It is not surprising to find that the currently available antihistaminics do not block all the sites of action of histamine. Other blocking drugs show similar specificities. For example, three different drugs, atropine, tetraethylammonium and curare are required to block all the sites of action of acetylcholine. Similarly, dibenamine and related drugs fail to block the action of epinephrine on the heart.

In our search for a drug which will block the action of histamine on the parietal cell we have examined, in addition to the familiar antihistaminics, a number of chemical analogues of histamine. Thus far, none with blocking action have been found. Those tested either have been inert or have shown histamine-like action or have potentiated rather than inhibited the action of histamine. An important example of the last type is acetylhistamine which has recently been shown to be a product of histamine metabolism in the body.

Atropine-like drugs. These consistently inhibit histamine-stimulated secretion, but seldom do so completely. Presumably they accomplish this inhibition by blocking the action of acetylcholine (ACh) which is probably continuously formed in gastric mucosa. This may explain why atropine, in blocking histamine stimulated secretion is more effective in the vagally innervated than in the vagally denervated stomach. Our recent studies indicate that ACh does not act as a

direct stimulant to the parietal cell but does act directly on the parietal cell to potentiate the response to other stimuli.

In normal human subjects 1 mg. of atropine subcutaneously completely abolishes basal gastric secretion, but fails to do so in a significant number of duodenal ulcer patients. In doses that can be tolerated for long periods, atropine produces only moderate depression of acid secretion in ulcer patients. A number of synthetic atropine-like drugs have been shown to have an action on gastric secretion similar to that of atropine. As with the antispasmodics, no synthetic atropine-like drug has been shown to have specificity for inhibition of gastric secretion.

Although atropine is at present the best secretory inhibitor available for clinical use, it is unlikely that an atropine-like drug will be the final answer to the problem because they are too diffuse in their action thereby producing distressing side effects, and because they do not completely paralyze the parietal cell, blocking only one of the mechanisms of excitation. The ideal drug will probably interfere with the mechanism for the formation of acid rather than with the mechanism for excitation of the process.

Other drugs. Sympathomimetics and pituitrin inhibit acid secretion but their side effects are too marked to make them practical. Pyrogenic substances inhibit gastric acid secretion by an unknown mechanism. The elucidation of this mechanism may throw some light on a practical means for inhibiting acid secretion.

None of the biological extracts capable of inhibiting gastric secretion—enterogastrone, urogastrone, and histaminase—are available in sufficiently pure form for injection into human subjects intravenously, the only route by which they are effective.

I believe that I have said enough to indicate that although this problem of inhibition of acid secretion has thus far resisted solution, certain avenues are still worth pursuing.

Another important facet to the problem of drug therapy in peptic ulcer is the development of substances capable of increasing the resistance of the mucosa to digestion by acid-pepsin. Animal experiments have indicated that certain extracts from intestines and from urine are capable of preventing ulcers in Mann-Williamson dogs. Because these extracts are effective without producing inhibition of acid secretion and because the protection persists after treatment is stopped, the anti-ulcer action of these substances has been designated as *anthelone* activity to distinguish it from secretory inhibitory activity.

At the present time, there are some who feel that urinary and intestinal extracts have had a fair trial in human patients with peptic ulcer and they have been found to be only slightly effective or ineffective. My own analysis of these facts is as follows:

Intestinal extracts which were effective in M-W dogs were highly effective in the original trials in human ulcer patients. Later studies, our own and others, with materials which were ineffective in M-W dogs

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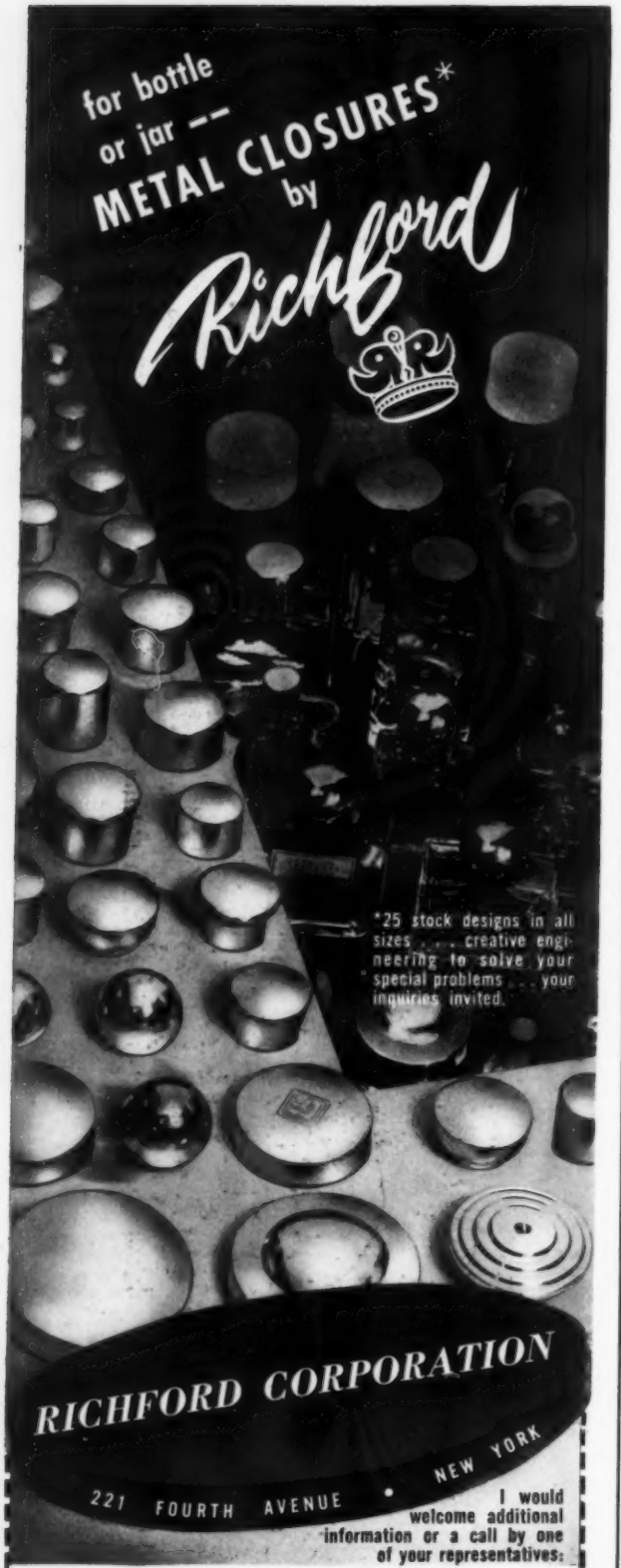
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showed little benefit in human patients. This parallelism cannot be ignored. Further tests on human patients with material shown to be active in M-W dogs obviously seems warranted.

In regard to urinary extracts these have been used parenterally in human patients only to a very limited extent, too limited to permit evaluation.

The issue is somewhat confused by the widespread use of intestinal and urinary extracts *orally* in the treatment of peptic ulcer. It should be remembered that none of these has been shown to be effective orally in the M-W dog.

As a final topic, I should like to mention some work which we have recently been doing on fat absorption. After total gastrectomy in man and the dog, food wastage occurs as evidenced by sizable increases in the nitrogen and fat content of the stools. We have been able to show that the feeding of a potent pancreatin preparation counteracts this food wastage. This treatment is also effective in those patients who show steatorrhea after subtotal gastrectomy. Presumably the rapid intestinal passage time after total or subtotal gastrectomy does not permit complete pancreatic digestion, in other words, there is a relative pancreatic insufficiency.

Dr. Gordon Gibbs of our laboratory has found that pancreatin or purified lipase is capable of improving vitamin A absorption in infants with cystic fibrosis of the pancreas.

As progressive pancreatic insufficiency develops in the course of chronic pancreatitis, fat is the first constituent of the diet to appear in excess. From these facts it is clear that lipase is a very important constituent of pancreatin. And yet, it is surprising to note that whereas pancreatin preparations must meet U. S. P. requirements for amylase and trypsin, there is not a standard for lipase. Lipase is the most labile of the pancreatic enzymes. Some commercial preparations of pancreatin which meet U. S. P. requirements for amylase and trypsin are almost devoid of lipase. The point I wish to establish is that lipase is clearly effective in treating a variety of steatorrheas and much good can come from developing pancreatin preparations with high lipase potency. Perhaps some other sources of lipase should also be investigated.

Bath Preparations

(Continued from page 27)

addition of builders such as the polyphosphates is not readily accomplished because too large an amount of them may cause the solution to cloud. The polyphosphates, in addition, are prone towards hydrolysis on long standing in water so that their efficacy may be destroyed.

The best solution seems to be of the detergent alone in water, with perhaps small additions of freezing point depressants such as propylene glycol or alcohol. Some of the detergents are excellent essential oil dispersants by themselves and it would, therefore, not be necessary

to use any additional sulfonated castor oil or polyethylene glycol ether esters in addition, but this latter step may be advisable if it is found that the detergent in question is capable of greater sudsing ability. The detergents mentioned under the powdered bubble baths are also in use in the liquids, but there are available for liquids an additional group of compounds which are well qualified for such a purpose but not easily usable as powders. Some of these are oleic acid or the oleyl radical rather than the lauryl radical since this is admirably suited to product stronger bubbles.

Here again the concentration of an active ingredient is dependent on the price at which the product is to be sold and may vary from 10 per cent to 35 per cent of the total. Manufacturing is by simple mixing since all ingredients are readily soluble in water. In some cases solution could be speeded by heating but this need not be necessary. If the viscosity of the solution should be desired to be raised, addition of small increments of methyl cellulose would do very well.

There are many other bath preparations, but this paper has been confined to materials used only in the bath. Both powders and similar materials will therefore not be discussed at this time. As stated above, when properly made each of these three classifications contribute greatly towards a greater enjoyment of the bath. The bubble bath serves the purpose for the younger generation as well as a method which would help ease the strain on their parents.

Antimalarials Today

(*Continued from page 29*)

World War II, the situation was hopelessly confused as to the value of the three available antimalarial drugs. In the medical literature, one could find innumerable dosage schedules and conflicting reports as to their effectiveness and toxicity. There was not even uniformity of opinion regarding the manner in which quinine, the oldest drug, could best be administered and completely contradictory opinions existed as to the usefulness of atabrine.

Shortly after Pearl Harbor, therefore, the United States was faced with the necessity of fighting a major war in the most malaria-infested areas in the world with 90 per cent of the supply of quinine in the hands of the Japanese. Under these circumstances, the organization of an intensive program for the evaluation of available synthetic compounds and the development of new ones became a vital necessity. A group in the National Institute of Health initiated the program which grew on a national scale and finally led to international planning and cooperation under the direction of the Board for the Coordination of Malarial Studies of the National Research Council. Through this Board, the combined efforts of military and civilian investigators were effectively integrated. Amongst these groups the university scientists and those in the laboratories of the pharmaceutical industry played a most important role. The program was first financed

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•

Oh, if FDR were only alive to be hated personally! It seems so much easier for some people to fight a sick man than a healthy idea.

•

One must exempt, of course, Westbrook Pegler. He appears to fight everything vigorously, including the aforementioned Westbrook Pegler. Switching from the late FDR to the late Heywood Broun, Pegler has found a new Corpse Celebre.

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by the Office of Scientific Research and Development and since the war by grants from the United States Public Health Service. The scope of the investigations is best demonstrated by the fact that over fifteen thousand drugs have been tested for therapeutic effect in several species of avian malaria and for toxicity in animals since 1941. Over one hundred and fifty compounds have shown enough promise to warrant testing in man.

Research during the war divides itself naturally into three phases. For over a year after Pearl Harbor, primary emphasis was devoted to the search for an effective substitute for quinine. It was established through clinical investigations in the United States and the field studies of the Australian group that atabrine when properly administered in daily doses was far superior to quinine as a suppressive drug in vivax malaria. Atabrine effectively suppressed even the highly relapsing Southwest Pacific strain of vivax malaria and most fortunately not only suppressed but cured the malignant tertain disease. This superiority of atabrine and the development of proper methods of administration was a most significant factor in the winning of the second World War. It led to the practical abolition of clinical attacks of malaria in the Allied armies under fighting conditions, though four hundred thousand men were infected with vivax malaria which recurred as soon as the drug was stopped; it abolished malignant tertian malaria as a clinical problem both during and after the war and, finally, it reduced the death rate from malaria to less than one per two thousand men having the disease.

The loss of quinine therefore turned out to be a boon to us, for the Japanese continued to rely solely on the older drug which proved to be a poor suppressive drug for the Southwest pacific strains of malaria. It is hard to understand why the Japanese failed to switch to atabrine. It is now obvious that malaria eventually fought on our side and made possible the island hopping in the Pacific which was of great strategic value. For this we can give thanks to the Germans who had the foresight to develope atabrine. In retrospect, it is now also understandable why military censorship forbade even mentioning the word malaria except as our government's own propaganda misled the American and Japanese public jointly into believing that Japan had the advantage with her supply of quinine. The American public could not be informed of the truth without warning the Japanese of a need for a change in the antimalarial discipline.

The next stage in the investigations during the war were dictated by military considerations and consisted of a search for suppressive drugs superior to atabrine. The discoloration of the skin following its chronic administration, the development of disorders of the skin commonly called "jungle rot," and the necessity for daily administration of drug were undesirable properties of atabrine. Highly effective nontoxic suppressive drugs were developed both in Britian and in this country. Through the combined efforts of British and Australian

investigators, who studied the antimalarial properties of a series of biguanides, a most effective drug, paludrine, which in this country is also called chlorguanide and guanatol, was developed. In the United States intensive investigations of the 4-aminoquinolines which had previously been studied by the Germans led to the development of several active compounds, of which chloroquine, now sold commercially under the name of aralen, is probably the most effective. Indeed it may prove to be the most useful antimalarial drug today.

Chloroquine has the following advantages over atabrine. It is highly effective in eliminating blood parasites and leads to more rapid symptomatic relief during clinical attacks. It is followed by longer latent intervals after treatment of acute attacks of vivax malaria in non-immune individuals. It leads to no discoloration of the skin and is followed by fewer and milder toxic symptoms. It effectively suppresses vivax malaria in small weekly doses and will abolish a clinical attack in treatment of only one day's duration. Like atabrine, it will cure the malignant tertain disease but does not affect the relapse rate in the benign tertian infection. Although chloroquine is more expensive and a little more toxic than the British drug, paludrine, which has similar characteristics, these disadvantages are more than compensated for by the fact that several strains of malarial parasites, particularly several found in Africa, can become highly resistant to paludrine.

Oxychloroquine, camoquin and santochin, of the 4-aminquinoline series, have antimalarial properties similar to those of chloroquine. Santochin, though less active and somewhat more toxic than the other drugs, is of special interest because its capture by the Free French in Africa greatly stimulated the investigation of the 4-aminoquinolines in this country, which had been allowed to lag after promising but incomplete earlier studies.

Although chloroquine has marked superiority over atabrine, it was only tested in limited military operations during the second World War because reconversion to this drug would have delayed military operations during reindoctrination of the troops. At the present time, however, there should be no reason for the continued use of atabrine in view of the superiority of both chloroquine and paludrine.

The final phase in the search for better antimalarial drugs began in the latter part of 1944 and was dictated by the need for a drug that would stop relapses, that is, a drug that would produce radical cure of vivax malaria. As increasing numbers of soldiers became infected, it was feared that upon their return home serious epidemics of malaria would develop. In the earlier phases of investigations, it has been hoped that truly curative drugs could be found by increasing the potency of suppressive agents. When, however, several antimalarial drugs having far greater suppressive activity than atabrine and quinine were developed and these compounds failed to reduce the relapse rate in vivax malaria, even in maximum tolerated doses, attention was again directed to plasmochin, the only known

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drug having curative properties in this disease, and to its chemical relatives known as 8-aminoquinolines.

Investigations have continued until the present time, but since the end of the war, the scope of the national program has been reduced. As before close cooperation has been maintained between investigators in universities, the pharmaceutical industry, the United States Public Health Service and the Army. The abolition of censorship and the granting of complete freedom to the investigators have proved to be an advantage which in part has made up for the smaller size of the program. In the beginning of these investigations, several new problems faced the investigators. As long as suppression had occupied the center of the stage, drugs could be tested in paretic patients who needed fever therapy to combat their disease. Such therapeutic malaria is commonly given by transfer of blood from one patient to another, because malaria transmitted by transfusion, unlike that following the bite of the mosquito, is easy to control as it does not relapse after quinine. Obviously this makes impossible testing of truly curative drugs in blood induced infections. The need for cooperative, healthy, non-immune volunteers who would expose themselves to the rigors of repeated attacks of vivax malaria after mosquito-innoculation of the frequently relapsing Southwest Pacific malaria and to the not inconsiderable dangers of the toxic manifestations of the 8-aminoquines was a serious problem in continuing investigations.

These volunteers were chiefly found amongst the inmates of several Federal, State and Military prisons. The patriotic zeal exhibited by these inmates in participating in the war effort as experimental subjects without previous promise of reward is highly commendable. The most extensive clinical investigations in the search for curative drugs in vivax malaria were conducted at the Illinois State Penitentiary (Stateville) where over eight hundred volunteers have experienced an average of four clinical attacks each. Approximately fifty potential antimalarial compounds, most of them belonging to the 8-aminoquinoline series, have been investigated at this institution under the direction of the University of Chicago investigators with the assistance of Army Medical Officers.

Two compounds, pentaquine and isopentaquine, have reached the stage of development where it can be definitely stated that they are superior to pamaquin or plasmochin. Of these, pentaquine which received preliminary study before the end of the war, is now available commercially. It has at least as great curative effect as plasmochin and is somewhat less toxic. It will cure very heavy infections in non-immune persons in three-quarters the maximum tolerated dose if administered with quinine for two weeks. Plasmochin will cure severe infections only when administered in the largest amount that can be tolerated by man. Pentaquine will cure vivax infections in veterans, who presumably have considerable immunity, in about one-quarter of the maximum tolerated dose. This may safely be administered on an ambulatory basis under

medical supervision. Isopentaquine, which is very closely related to both of the earlier drugs, is somewhat more effective on an equal weight basis than either of the former drugs and is less toxic. However, all of these drugs still possess enough toxicity when administered to dark skinned races to limit their usefulness in the control of malaria in endemic or hyperendemic areas. They may have limited value in the field because, used intermittently in very small doses, they eliminate the sexual forms of the disease in the blood, thereby, preventing transmission of malaria to mosquitoes; but, curative drugs which we possess at present have as their chief virtue the ability to eradicate relapsing malaria completely in the traveler returning from the tropics to a malaria free area.

So matters stand at present except for the uncertainty of several drugs which have only undergone early experimental investigation. Although some of these look promising and may eventually prove to be more universally useful than the present curative drugs, it is too early to predict their value. This includes primaquine which unfortunately has recently been heralded in the press as a "wonder drug" on the basis of far from accurate reporting.

We may summarize as follows: Although the ideal drug that would possess prophylactic, suppressive and curative properties against all forms of human malaria in nontoxic dosage was not found during the large scale investigations begun with the onset of World War II, important advances were made. We now possess several suppressive drugs of such low toxicity and great antimalarial effect that the clinical manifestations of malaria can be suppressed by weekly drug administration. These drugs also lead to radical cure of falciparum infections. Curative drugs for the relapsing disease are too toxic for administration without medical supervision in darker skinned races but can safely be administered to white persons on an ambulatory basis on their return to areas that are free of malaria.

In the problem of world malaria, drugs will probably always play a secondary, but important, role to insecticides such as DDT and to sanitary engineering projects. With the judicious use of drugs and all the other known antimalarial measures, however, it can be stated that the control of malaria in any area is no longer a medical problem but an administrative, economic, sociological and political one. Elimination of malaria is now possible wherever these factors are favorable. The new discoveries and developments can open up large areas in the tropics which previously have been closed to the white man. Improved malaria control may raise the standard of living in many "backward countries." Malaria can now be eradicated from plantations, many native communities, at least parts of large nations, from islands if not from continents. Malaria need never again become a serious military problem. It will in all probability continue to be a devastating disease in large areas of the world for years to come, but we may now hope with good reason that it will become an extinct disease in the United States within a very few years.

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New Views on Vitamin A

(Continued from page 34)

of value in Darier's disease (keratosis follicularis), pityriasis rubra pilaris, xerosis of the skin, acne vulgaris, kraurosis vulvae and ichthyosis. However, as noted by Leitner and Moore,[59] in patients with certain of these diseases the results of plasma levels or of absorption curves do not consistently indicate a vitamin A deficiency.

Obermeyer and Frost[60] have remarked that high doses of vitamin A seem to affect a large number of dermatologic diseases by their influence on the integrity and resistance of epidermal and epithelial surfaces. While it has been claimed that vitamin A serves as an important buffer against pyrogenic infections, it seems probable that its effect is only indirect and that excessive keratinization of epithelium paves the way for infection. They note that the mechanism by which vitamin A exerts its effect on epithelial tissue has yet to be explained.

They also make the interesting observation that vitamin A, because of its solubility in fats, is absorbed through the human skin. In view of the possibility of local demands for vitamins, it may be that in the treatment of local lesions the application of vitamin A in anhydrous wool fat is most effective, because of the likelihood of greater local concentration. They feel that this is a phase of utility which deserves further study.

Also very noteworthy are the statements made by Behrman[61] before the members of the American Pharmaceutical Manufacturers Association. He stressed that the brilliant dermatologic progress reported in the field of vitamin research requires critical evaluation. However, certain conclusions can be drawn. Thus, in his opinion, vitamin A is probably of value to increase skin or mucous membrane resistance to infection and lessen keratinizing metaplasia. He suggests that it may be tried for acne with severe comedo formation, Darier's disease, and other skin disorders that are characterized by follicular hyperkeratosis. Significant is his statement that vitamin A is more effectively absorbed in aqueous than in oily media.

In considering conditions characterized by excessive kerotinization, such as calluses, corns and keratosis, Obermeyer and Frost[60] state that vitamin A therapy is of definite value in the treatment of patients with an abnormal tendency to the formation of calluses. They cite a report which described the successful treatment of corns with vitamin A and mention data which shows that keratosis blennorrhagica was treated successfully with this vitamin. Of pertinent interest is Chamberlain's[62] recommendation that, in the treatment of warts, it is well worth trying the daily administration of 100,000 units of vitamin A for a period of six to twelve weeks.

Also well worth noting is the suggestion by Reyes[63] that there may be a relationship between hyperkera-

tinization and poliomyelitis. He found that 98 per cent of the children admitted to St. Francis Hospital in New York for poliomyelitis showed hyperkeratosis of the skin. Therefore, he reasons, vitamin A deficiency may be considered as a possible predisposing cause of polio.

The report by Straumfjord[64] in 1943 awakened interest in the relationship between vitamin A therapy and acne vulgaris. He found that the daily administration of 100,000 units for periods of from nine to eighteen months resulted in the disappearance of acne lesions in a great majority of the cases. In studies to confirm these observations, Obermeyer and Frost[60] found that vitamin A therapy is undoubtedly of benefit in the treatment of some forms of acne vulgaris while others do not seem to be influenced by it. It appears to be most effective in cases characterized by prominent follicular plugging in addition to the formation of comedomes.

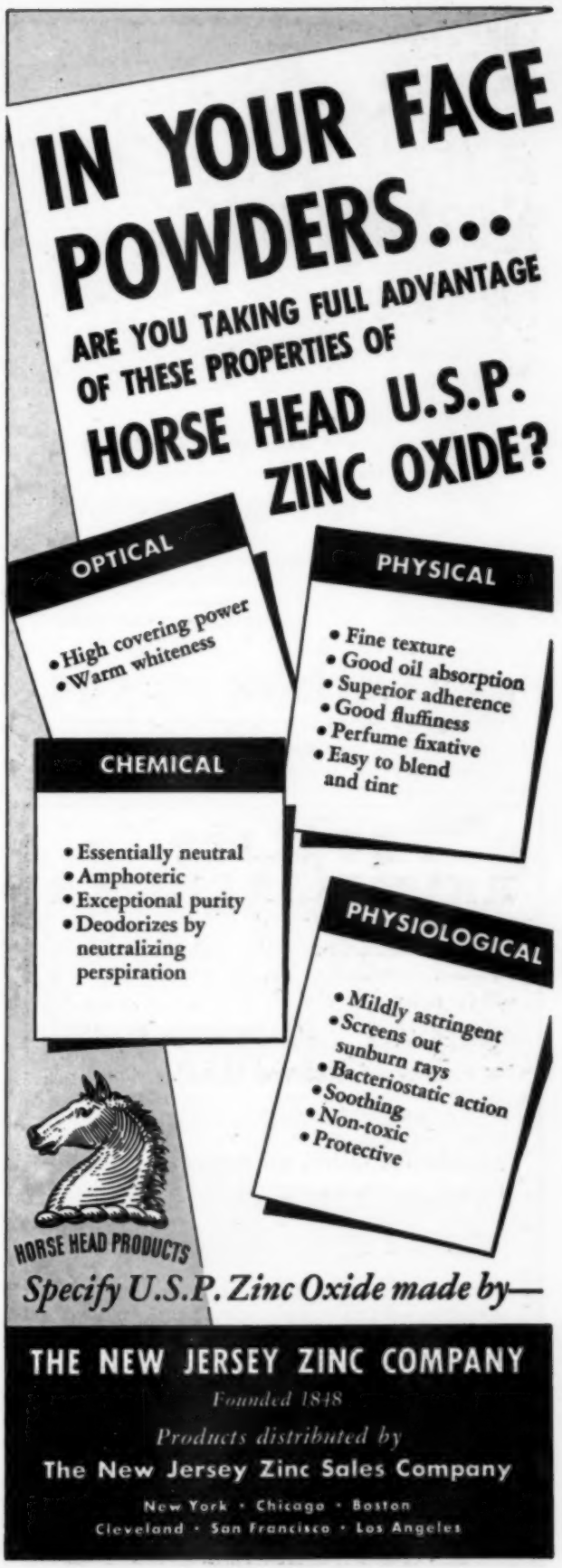
Hazel[65] has remarked that, while there is no particular evidence of vitamin A deficiency in patients with acne, its use in 100,000 unit doses at bedtime has been so helpful in managing acne in adolescence that he prescribes it routinely. This therapy should be maintained, in his opinion, for at least a year after all evidence of acne has disappeared. As shown by the studies of Lynch and Cook,[66] a short-term treatment of acne with vitamin A is of little benefit.

In passing it should be mentioned that Davidson and Sobel[67] found that the absorption of vitamin A in patients with acne vulgaris was far better with vitamin A in an aqueous medium than when dispensed in an oily medium.

In addition to the dermatological conditions already mentioned, there is clinical evidence[68] that vitamin A administration is of benefit in a good proportion of cases of keratosis seborrheica and keratosis seniles. A European report[69] indicates that the administration of vitamin A was beneficial in 21 of 27 patients with tuberculosis of the skin. The therapeutic results of such treatment was enhanced by the conjunct administration of vitamin C. In a preliminary report, Kline and Colavita[70] stated that treatment complications in syphilis were prevented when patients were given injections of a polyvitamin preparation containing both the oil-soluble and water-soluble vitamins.

There is considerable divergence of opinion regarding the value of vitamin A in the treatment of hypertension. That the large-dose administration of vitamin A (100,000 to 200,000 units per day) is beneficial in many cases of high blood pressure was indicated in the reports of Govea-Pena and Villaverde[71,72] and of Pond and Rosen.[73] Unfortunately, other workers[74,75] have not been able to confirm this effect. A number of investigators believe[28,76] that the antihypertensive substance in fish oils is not vitamin A itself, but some unidentified oxidation product of vitamin A or some other constituent.

Of importance in connection with the above are the observations made by Taylor and his coworkers.[77]



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They found that although large doses of vitamin A concentrate are ineffective in the treatment of essential hypertension, they do cause renal vasodilatation and heightened functional capacity with increased cardiac output. It was therefore suggested that the concentrate may have application in the treatment of degenerative kidney diseases.

More recently, Page, Corcoran and Taylor[78] commented further on the fact that the administration of very large doses of vitamin A concentrate to patients with renal injury sometimes results in quite dramatic restoration of function towards the normal. However, the nature of the agent present in these concentrates which is responsible for the beneficial renotrophic effect is not clear. They do not believe that it is not vitamin A, but is most likely a substance of similar chemical character which is present in the concentrate in low proportions.

Obviously the availability of adequate supplies of synthetic vitamin A will help to clarify the issue with respect to both the antihypertensive and renotrophic factors associated with the concentrates obtained from fish liver oils.

There is some evidence that vitamin A therapy may be of value in the treatment of certain gastrointestinal disorders. Thus, in studies on the influence of vitamins and hormones in the prevention of experimental cinchophen-induced peptic ulcers, Nasio[79] found that a high dose of vitamin A given with the drug does not prevent ulcer formation. However, such oral administration of the vitamin did counteract the loss of weight in the experimental animals being given cinchophen.

In India, 20 cases of vitamin A deficiency in children, which were associated with severe diarrhea, were found[80] to respond promptly to the administration of a vitamin A concentrate. Cases that had failed to yield to kaolin, bismuth subcarbonate or sulfaguanidine were benefited by the vitamin. All 20 patients had a dramatic control of the diarrhea by the end of 48 hours after the administration of one cc. of a vitamin A concentrate containing 72,000 I.U. per cc.

The determination of plasma levels of vitamin A and carotene is a useful laboratory aid in the diagnosis of sprue, a disease in which diarrhea is a common symptom. It has been found[81] that the plasma levels in persons having this disease are significantly lower than those of normal individuals.

There is laboratory and clinical evidence of an interaction between vitamin A and the thyroid gland. Simkins,[82] for example, is of the opinion that vitamin A is of great value in treating hyperthyroidism and in alleviating the toxicity of the condition. With doses ranging from 200,000 to 400,000 I.U. per day for periods up to 51 weeks, he was able to obtain complete cures in two rather severe cases. Vitamin A, says he, acts very much like iodine in producing a rapid decrease in the basal metabolic rate, an increase in the blood cholesterol and a marked amelioration of symptoms

but causes a slower decrease of pulse rate and increase in weight. He feels that the addition of iodine to vitamin A therapy may enhance the effectiveness of the vitamin.

The results of experimental studies, in which radioactive iodine was used as a tracer, showed[83] that iodine metabolism is abnormal in the vitamin A-deficient rat. From studies on the ut lization of carotene and vitamin A by hyperthyroid and pregnant rats, Morgan and White[84] reported that the thyroid hormone appears to promote the transformation of carotene to vitamin A or carotene absorption or both. In addition, it seems that, in pregnancy, conditions similar to moderate hyperthyroidism affect carotene utilization.

From reports in the research and medical literature, vitamin A may have therapeutic worth in the treatment of various other conditions. Much interest has been aroused, for instance, by Lobel's[85] report of the value of parenteral injections of vitamin A in deafness. He found that hard-of hearing patients given 50,000 unit-doses twice weekly may gain appreciably in hearing function. This treatment was especially effective in cases of catarrhal deafness. In all, some 300 patients with progressive deafness have been studied and treated with an injectable preparation containing olive oil, terpins and 50,000 units of vitamin A per cc.

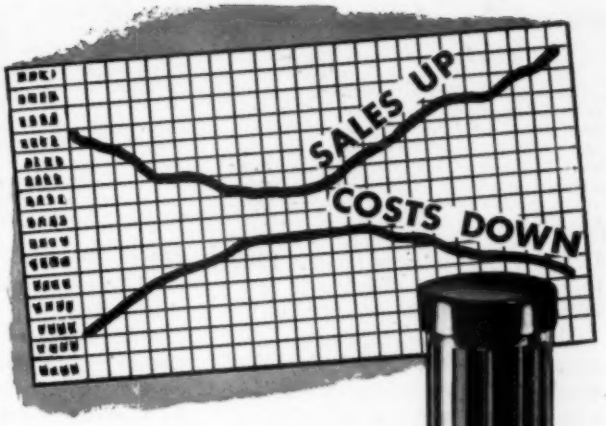
Leukoplakia is another condition that often responds to vitamin A therapy. Thus, the vitamin is said[86] to be effective in some cases of leukoplakia of the mouth and may be given in doses of 50,000 to 150,000 units daily for a prolonged period. In 14 of 18 cases of leukoplakia vulvae, Hyams and Bloom[87] obtained objective and subjective relief through the administration of vitamin A in an oral daily dosage of from 250,000 to 500,000 units, supplemented by injections of 50,000 units twice weekly. In addition, each patient received one cc. of diluted hydrochloric acid in water three times daily with each meal.

Adequate amounts of vitamin A are also among the important factors in the prophylaxis and in the prevention of recurrences of rheumatic fever.[88] Rae[89] mentions that, in the treatment of rheumatoid arthritis, 70,000 units of the vitamin have been given daily.

Before concluding mention should be made of Mellenby's[90] studies on the relationship between vitamin A and bone growth. Vitamin A, he believes, plays a controlling part in the molding of all bones. When given in the proper amounts, it insures that bone growth or bone molding proceeds along correct, predestined and safe lines. When there is a deficiency of the vitamin, growth continues in an orderly but wrong way, which leads to injury or even destruction of the nervous tissue and ultimately to the death of the animal. The restoration of vitamin A to the diet of the deficient animal quickly brings about a response in the bone cells directed to correct the abnormal growth resulting from the absence of the vitamin.

Of kindred interest is the experimental work done by Copp and Greenberg[91] on the effect of vitamins A and

(*Continued on page 111*)



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Patent Thoughts and Trends

(*Continued from page 73*)

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2,488,253—**Upjohn — Basic Thio Esters.**

2,488,268—**Squibb — Preparation of Urea-(Stibanilic Acid) Reaction Products.**

2,488,558-9—**Shell Development Co. —Purification of Penicillin.**

2,488,564-5—**Ortho Pharmaceutical —Hyaluronidase Preparation.**

2,488,682—**Perfume Spray Products —Perfume Atomizer.**

2,488,737—**Merck—Penillamine Hydrohalides.**

2,488,878—**Am. Cyanamid—Penicillin Extraction.**

2,488,904—**Sterling Drug—1-Methyl-5-Aminoacridine.**

2,488,910—**J. B. Helms—Cosmetic Applicator.**

2,489,001—**J. L. Younghusband—Lipstick Device.**

2,489,086—**E. A. Ferguson—Tincture of Digitalis Stabilized by Adsorbent charcoal treatment.**

2,489,167—**Merck—Isopenillic Acid.**

2,489,235-8—**Hoffmann—La Roche —Biotin Synthesis.**

2,489,247—**W. R. Warner—Pyridine Quaternary Salts.**

2,489,351—**Merck—Benzotriazines.**

2,489,380—**Sulphite Products Corp. — 5 - Hydroxymercurivanillin - disinfectant for coatings, adhesives, lumber, etc.**

2,489,423—**Sterling Drug—3-Trifluoro - methyl - 4 - chlorophenol Fugistatic Agent.**

2,489,530—**Dar - Syn Labs — Preparation of 8-Hydroxy-Quinoline.**

2,489,695—**Hoffmann-La Roche—Dihydro-pyrogallol.**

2,489,881—**Merck — 2 - Benzyl - 4 - Hydroxy-Methylene-5(4) Oxazolones**

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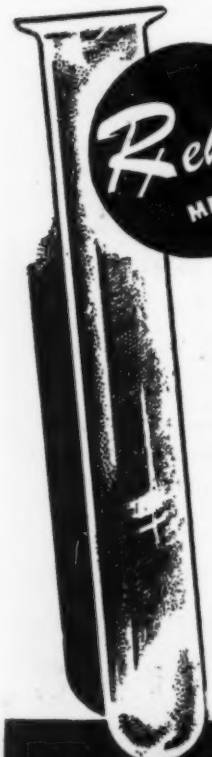

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New Views on Vitamin A

(Continued from page 109)

D on bone fracture healing. In these studies normal rats were compared with animals placed on a vitamin A-deficient diet and a vitamin A-supplemented diet. The unfractured bones of both vitamin A deficient and supplemented rats were equally as strong as the unfractured bones of the normal animals maintained on a stock diet. The fractured bones of the vitamin A-supplemented rats returned to about the same strength as when the rats were fed the stock diet. However, the vitamin A-deficient rats showed a slower return to normal strength of the fractured bone. The calcification activity in both the deficient and supplemented groups was lower than had been observed in the normal animals on the stock diet.

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Fatty Alcohol Sulfates for Shampoo

(Continued from page 37)

Liquid Cream Shampoo

Fatty Alcohol Sulfate D	35
Magnesium Stearate	4
Polyvinyl Alcohol 10% Sol.	6
Lanolin	1
Glyceryl Monolaurate	2
Cetyl Alcohol	2
Water	50
	100

Procedure

The magnesium stearate is pasted with the fatty alcohol sulfate, adding the polyvinyl alcohol and the water. The mixture is heated to 77° C. Cetyl alcohol, lanolin and glyceryl monolaurate are heated together to the same temperature as the water phase. The water phase is added to the oil phase with agitation.

The above formulation yields a milky liquid shampoo with good body and a plesant emollient effect. The use of fatty alcohol sulfate D produces a cream-colored shampoo stable during a period of observation of three months. This shampoo sets up at 5° C. and becomes fluid at 15° C. Samples of this shampoo remain opaque at 55° C.

Liquid Cream Shampoo

Fatty Alcohol Sulfate C	45
Magnesium Stearate	2
Polyvinyl Alcohol 10% Sol.	6
Lanolin	1
Glyceryl Monolaurate	2
Cetyl Alcohol	2
Water	42
	100

Use the same method of preparation as for fatty alcohol sulfate D formula above. The above formulation gives a milky liquid shampoo with good body and pleasant emollient effect.

Clear Type Shampoo

Fatty Alcohol Sulfates A, D or C	35
Sodium Alginate	2.5
Water	62.5
	100.0

Sodium alginate is added to the fatty alcohol sulfate with warming to 50° C. and water added. This formula produces a clear type shampoo with good body and appearance.

A few remarks should be made concerning the additives used:

Sodium Stearate

This product, which is used as a thickener mostly for the paste type shampoo, may either be made in situ from sodium hydroxide and stearic acid or added

directly as the finished soap. Potassium stearate is preferred to sodium stearate for certain liquid cream shampoos.

Magnesium Stearate

This product is one of the better whiteners. Good results are also obtained with higher alkyl esters such as stearyl palmitate, stearyl laurate and cetyl laurate. Some of the higher alcohol sulfates, from cetyl and stearyl alcohols, can be used for the same purpose.

Glyceryl Monolaurate

The material used has a melting range of 55-57° C. The type which contains a small amount of soap or fatty acid is more widely useful than the pure ester. We have employed successfully other alkyl esters such as glyceryl monococate and glyceryl monostearate.

Cetyl Alcohol

Cetyl alcohol serves as both a stabilizer and a whitening agent. It is especially valuable in liquid cream shampoos. Technical stearyl alcohol ("Stenol"), is also satisfactory.

Polyvinyl Alcohol, Methyl Cellulose and Sodium Alginate

These materials are employed to increase viscosity and as protective colloids. The polyvinyl alcohol used is 88-90 per cent hydrolyzed and of high viscosity. It is an excellent emulsifying assistant and rinses freely.

Methyl cellulose, a 50 centipoise material, may be used in conjunction with polyvinyl alcohol to give the proper viscosity with minimum tackiness.

Sodium alginate is especially satisfactory for thickening fatty alcohol sulfates B, C and D for clear type shampoos.

These standard shampoo formulas have proved quite useful in determining the effects of variables. One interesting application has been testing the effect of perfume materials on the stability of the shampoos.

It was first determined experimentally that for these shampoos there was no advantage in dispersing the perfume oil in part of the fatty alcohol sulfate prior to addition to the shampoo as against direct addition of perfume oil to the shampoo.

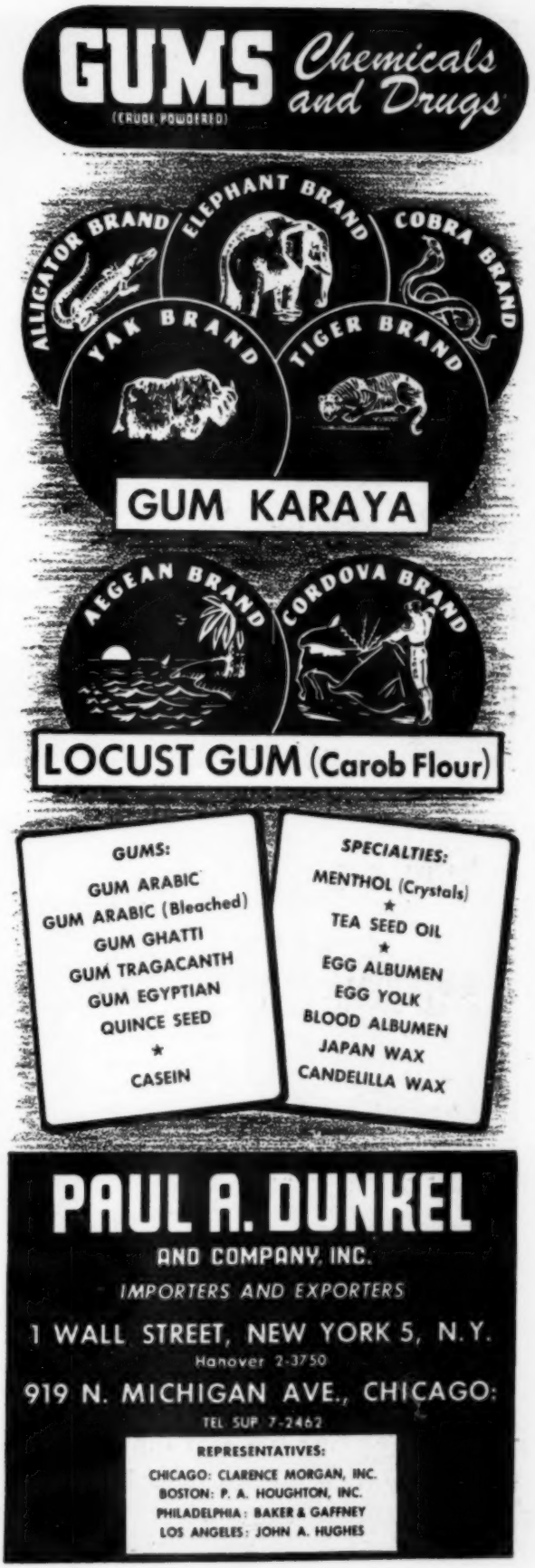
The following observations, which were made by comparing emulsions containing 12.5 per cent perfume oil and 87.5 per cent fatty alcohol sulfate, exemplify further the differences in physical properties among these products.

Fatty alcohol sulfate A generally gives W/O emulsions except for Oil of Sweet Orange.

Fatty alcohol sulfate D gives clear type O/W emulsions with most oils, showing its capacity for solubilizing.

Fatty alcohol sulfates B and C are intermediate between D and A for their solubilizing properties to give O/W types.

Oils with hydrophilic groups, for example, hydroxycitronellal and phenyl ethyl alcohol, are easily solu-



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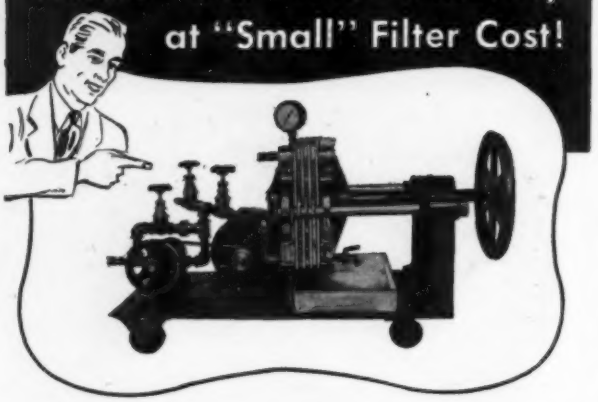

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bilized; although, in the case of linalool, it leads to gel formation.

High molecular weight oils such as hexyl cinnamic aldehyde tend to form W/O emulsions.

There are no emulsion stability probelms in perfuming paste and clear type shampoos; liquid cream shampoos do present some stability problems.

The following perfume oils, comprising essential oils, synthetics and compounds were added at a concentration of 0.2 per cent to liquid cream shampoos made with these various fatty alcohol sulfates.

Patchouly	Hydroxycitronellal
Cananga	Hexyl Cinnamic Aldehyde
Bois de Rose	Benzyl Acetate
Sweet Orange	Terpinyl Acetate
Bergamot	Linalyl Acetate
Geranium Bourbon	Amyl Salicylate
Petitgrain	Methyl Anthranilate
Lavender Barreme	Rhodione AB
Geraniol	Eugenol
Phenyl Ethyl Alcohol	Coumarin
Terpineol	Musk Ambrette
Linalool	Cedrene
Phenylacetaldehyde	Bqt. 6197
Citral	Bqt. R-200.228
Alpine Violet	Bqt. 2483/1
Verdinal	Bqt. R-100.413
Lauric Aldehyde	

The procedure was as follows:

Fifty g. aliquots of the shampoo under test were heated to 50° C. using a water bath. The sample was stirred by mechanical agitation and the perfume oil added dropwise. Agitation was continued for three minutes avoiding the incorporation of air. The sample was then bottled and labeled. A control test was run for each batch of shampoo; that is, a sample without perfume was heated and stirred for stability control.

No stability observations were made if the control sample exhibited instability. The control sample for the fatty alcohol sulfate D shampoo was always stable; whereas not all batches of the A and C shampoos were entirely stable when replicates were run using materials from the original stock. This suggests that shampoos using the fatty alcohol sulfates A and C formulas given above would not be satisfactory for commercial use.

The results were interesting in that most of the shampoos remained entirely stable and showed no creaming. Products which showed a tendency to destabilize the emulsions were:

Citral	Rhodione AB
Phenylacetaldehyde	Patchouly
Hexyl Cinnamic Aldehyde	Bois de Rose
Linalyl Acetate	Cananga
Bergamot	

A series of tests were then run at 0.5 per cent concentration using the oils which affect the stability of the emulsions and others which have no effect at 0.2 per cent concentration.

The results were: Very stable formulations, such as the fatty alcohol sulfate D formula, were not broken

by the products listed immediately above; other formulations, apparently equally stable when unperfumed, were broken by the above products.

A perfumer should, therefore, carefully test perfume oils containing appreciable percentages of the suspect ingredients for the effect on the stability of shampoos.

The discoloration effects developed by the ingredients tested were those generally occurring in alkaline media. Off-colors were given by vanillin, eugenol, methyl anthranilate, patchouly, bergamot, citral and phenylacetaldehyde.

Perfuming clear type shampoos presents another problem because many perfume oils either develop a precipitate or do not disperse to colloidal size particles. Many perfume compounds containing large proportions of citrus oils and fixatives are not satisfactory for perfuming clear type shampoos. Fatty alcohol sulfate D is generally better than the other fatty alcohol sulfates for giving liquid clear-type emulsions with almost all perfume oils.

A final comment should be made with regard to perfuming shampoos containing these products. All these fatty alcohol sulfates have a slight odor reminiscent of the alcohols from which they are made. Fatty alcohol sulfate A and B have somewhat milder odors than C and D. This series of tests and others have pointed out to us the limited number of perfume components which blend favorably with these fatty alcohol sulfate shampoos.

These individual ingredients have been compounded into perfume oils which blend with the odor of these fatty alcohol sulfates to do a pleasant and effective perfuming job at minimum cost. Shampoos containing these oils have been shelf-tested for at least six months to select the perfumes which have changed the least in odor type and strength during storage.

Pharmacological Testing of Cosmetics

(Continued from page 23)

sorption? I think there have been one or two papers on absorption of sodium iodide through the skin, I believe, or something of that sort. I realize that the work involved in the preparation of these radioactive compounds might outweigh any savings they would make in their recognition; but, theoretically at least, it should be very easy to find where they go in the body, if they were absorbed.

Dr. Draize: We haven't done any radioactive tracing, so to speak, of these substances. But we are at present trying to get the equipment together. This equipment is very costly. But we are considering it and are getting it together. I don't know just how soon we shall get to it. It means a great deal of work but it would simplify matters a lot, possibly.

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Geranium Oil Supplies

(Continued from page 31)

Marshall Plan aid—they come into the markets for these raw materials and thus increase demand and force prices upward. When a demand of this size becomes normal there will probably be supplies to satisfy that demand at more normal prices. However, it is quite likely that prices will not return to prewar levels, but will decline to a level higher than prewar levels by close to the additional costs of living for the producing areas.

During 1939 and 1940 possibly 250 tons of geranium oil were exported from Reunion. Stocks were again very heavy in 1944, probably totaling about 200 tons, as practically nothing had been exported during the war years. In Africa the people were more interested in growing vegetables and wine grapes, and production of African geranium oil has decreased still further since then. There seems to have been abroad a general impression that geranium oil has been in much greater supply than is supported by the facts. Actually the exportation of Bourbon geranium oil from 1910 to 1939, which included three years, 1924, 1925, and 1926, when production was more than 111 tons a year, averaged only 73.33 kilos per year. During the same time African exportation including two years, 1926 and 1928 which produced more than 140 tons each, averaged only 48 tons. Reliable figures for the years following 1939 are not available, but it seems certain that average production since then has been far below the previous averages given.

Due to the high prices at which geranium oil is now moving growers in Africa are said to again becoming interested in the cultivation of the plant. However, any relief from this increased interest will not affect the market until future crops become available which will not be until late Spring at the earliest. Due to a drought in Africa, the Fall crop is not expected to yield more than one to three tons of oil, and this certainly will keep the market in a strong position for some time to come.

Bourbon geranium oil stocks at the end of 1944 amounted to 200 tons, with 80 tons added during

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1945. The price then was around 600 francs, but when England started buying under Government control, the price advanced to 775 francs, with the American market paying as much as $25.00 per kilo, or $11.40 per pound. After the cyclones of 1944 and 1946 the production was about fifty tons, but at this time England was able to buy freely and the price advanced to 2,240 francs per kilo or in U. S. currency, $32.00 per kilo, or $1.45 per pound. In 1947 the price remained stable at around 1,500 francs per kilo, due to a normal production, but again in 1948, after the cyclone of January 25, the price advanced to 2,000 francs during April and to 2,800 francs during May. The market has continued to advance right up to the present time. Now it is known that the total production from the actual crop will not exceed four tons, with practically no stocks remaining from previous crops. It is also feared that the new crop this year—from the middle of this month to the middle of March—will not yield more than 50 to 60 tons. And if another cyclone occurs, much of this anticipated oil will not be realized.

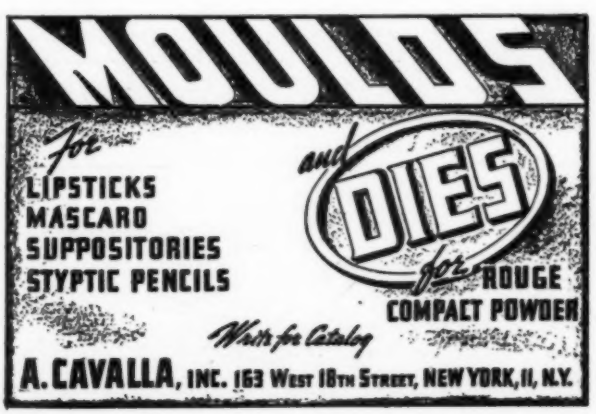
GREASELESS SUNTAN LOTION: Please send us a formula for a greaseless suntan lotion. We are subscribers. Miami.

I think that something made along the following lines will prove satisfactory:

Menthyl salicylate	**9.0**	**per cent**
Glycerine	**3.0**	" "
Borax	**2.0**	" "
Alcohol	**15.0**	" "
Water	**70.5**	" "
Perfume	**0.5**	" "

Heat the water, dissolve the borax in it and add the salicylate. Stir until dissolved. Mix the perfume with the alcohol, add the glycerine and stir this into the menthyl salicylate solution. Filter. If it is desired to color the solution add a sufficient quantity of spirit soluble brown.

Of course, other sun screens can be used instead of menthyl salicylate, provided compatibility and suitable proportions are taken into consideration.



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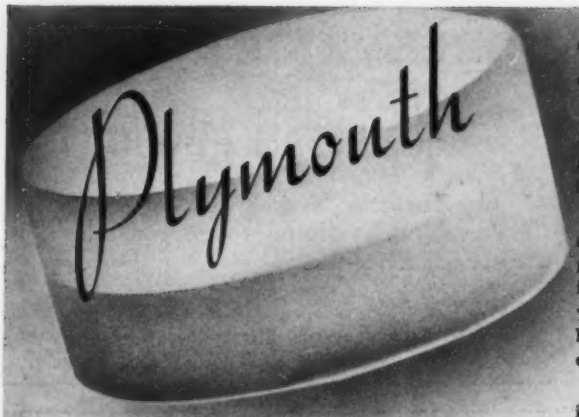

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